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ORIGINAL ARTICLES.

GROSS ABNORMALITIES OF THE APPENDIX VERMIFORMIS NOTED IN 3550 AUTOPSIES.

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Anatomical, pathological and clinical data concerning the appendix vermiformis are always of a practical interest to the medical practitioner. The frequency of pathological conditions in this organ, be they of a degenerative, of an inflammatory or of a neoplastic nature, is responsible for the many studies which have appeared on the appendix vermiformis.

There are normal conditions, locations, sizes and general relations of the appendix. Any deviation from the normal we consider abnormal. How can the nature and the frequency of these abnormalities be determined, be they abnormalities in location, in size, in general relation, in anatomical integrity? By the comparison and the discussion of observations made in the dissecting room, on the operating table and in the post-mortem room. This paper is based exclusively on observations made in the latter. The post-mortem records of 3550 consecutive and unselected autopsies, held in the Cook County Hospital, between January 1, 1893, and December 30, 1905, inclusive, were examined. These post-mortems were held on patients who died in the institution. An autopsy in this institution can only be held in the absence of protest from friends or relatives. No special space in the records was allowed to the appendix until the year 1896. Before that time the nature, the frequency and the importance of inflammations of this organ were not as fully understood and as fully appreciated as they are now.

The frequency of adhesion of the appendix vermiformis to neighboring structures and organs impressed us.

The appendix vermiformis was found adherent to neighboring structures or viscera 486 times. It was not possible to determine accurately in what proportion of cases the condition of "adherent appendix" was due to a previous inflammatory process of the appendix, or to a previous inflammatory process extending to the appendix from adjacent structures, in which it had originated. These adhesions are of interest to

the clinician, to the pathologist and to the surgeon. They are frequently the cause of obscure (obscure as to correct interpretation) abdominal pains (adhesions to colon, to small intestines, to abdominal wall); of digestive disturbances (adhesions to stomach, liver, gall bladder). They may be the cause of vesical, of rectal tenesmus (adhesions to the urinary bladder, to the sigmoid flexure of the colon, to the rectum).

Adhesions can lead to kinking, to twisting, to obstruction of the appendix, to interference with its circulation, to impairment of its peristaltic action; can be the means of extension of an inflammatory process from the appendix to the structure or organ, to which the appendix is adherent; can make the appendix serve the office of a band over which a loop of intestines may become kinked, or beneath which a coil of gut may become looped. In either case intestinal obstruction or strangulation results. The appendix may lie concealed in a mass of adhesions.

In 145 cases of chronic adhesive appendicitis examined and analyzed at the Boston City Hospital, 118 showed no evidence of any abdominal condition to which adhesion could be referred, other than a prior inflammation of the appendix. Hence, they can be considered cases of primary chronic adhesive appendicitis. In 27 cases other sources for the adhesions could be ascertained (secondary chronic adhesive appendicitis), as salpingitis, hydrosalpinx, myoma of uterus; in 3 cases, carcinoma of uterus, with other pelvic structures; in 3 cases, disease of the gall bladder; in 2, tubercular peritonitis, etc.

These adhesions always prolong the operative intervention and may lead the surgeon to completely modify his technique in appendectomy.

For instance, in those cases in which the appendix is so closely adherent to the wall of the cecum that it appears almost a part of it, and cannot with safety be separated from it. In such cases, the appendix may be split lengthwise, and its mucous membrane removed and ligated at its junction with the cecum, and the wound in the appendix sutured.

The analysis of 486 cases in which the appendix was adherent shows the following:

Appendix adherent to cecum in 357 cases.
Appendix adherent to psoas muscle in 44 cases.
Appendix adherent to hernial sac in 5 cases.
Appendix adherent to omentum in 16 cases.
Appendix adherent to small intestines in 18 cases.
Appendix adherent to ascending colon in 10 cases.
Appendix adherent to parietal wall in 18 cases.
Appendix adherent to brim of pelvis in 8 cases.
Appendix adherent to rectum in 2 cases.
Appendix adherent to sigmoid flexure in 1 case.
Appendix adherent to stomach in 1 case.

Appendix adherent to liver in 2 cases.

Appendix adherent to urinary bladder in 1 case.

In the cases in which it was adherent to the psoas muscle, in some the course of the appendix was parallel to the long axis of the psoas muscle; in some, transverse to it; in others, oblique.

In cases of adherent appendix not included in the above, the appendix was adherent to more than one structure.

Cunningham says: "The following locations of the appendix vermiformis have been considered normal by one or more observers: (1) Over the brim, into the pelvis; (2) upwards behind the cecum; (3) upwards and inwards towards the spleen." In these 3550 cases it is reported that the appendix was located partially or wholly in the true pelvis 155 times. This fact shows the utility of rectal and vaginal examinations in suspected cases of appendicitis; it explains the frequency of pelvic abscesses in suppurative inflammations of the appendix vermiformis, and the rupturing of some of these abscesses into the uterus, into the rectum, into the urinary bladder, etc.

The appendix vermiformis was found in a hernial sac five times, cases 6182, 6924, 5245, 5344, and in case G. B., June 26, 1896. In each of these cases we are dealing with a right inguinal hernia. In one, the appendix was the only viscus present. In two others, a part of the cecum was present in the hernial sac with the appendix, and in the fourth, small intestines and the appendix vermiformis formed the contents of the hernial sac. All these hernia were irreducible, owing to the presence of adhesions. In one of these cases (5245) many concretions were found in the appendix.

The appendix was retroperitoneal in 12 cases. A retroperitoneal appendix is liable, if it becomes inflamed, to cause a retrocecal or retrocolic abscess. Retroperitoneal vermiform appendices play an important part in the causation of subphrenic abscesses.

Kelly and Hurdon say: "The question whether the appendix is an intraperitoneal or extraperitoneal organ is chiefly decided by the position it assumes in relation to the cecum or colon, whether it is downward or upward; or, in more correct expression, early fusion between the colon and the posterior abdominal wall is apt to produce an ascending or retroperitoneal appendix, while late fusion brings about a pendant intraperitoneal appendix."

In case 5259, patient six months old, the appendix was found in the ascending colon. The lower end of the ileum had passed upward through the ileocecal valve with the cecum into the colon. The appendix at its attached end had been inverted with the bowel. The half below the constriction was gangrenous.

Case 6432. In this case the appendix was herniated through its own mesentery. It was not the seat of adhesions.

In case 5750, a case of gangrenous appendicitis, the cecal end of the appendix opened into a large abscess cavity in the liver. The opening in the appendix corresponded to the site of the liver abscess.

In twenty cases the appendix was partially or completely obliterated. It is said that total obliteration of the canal insures perfect immunity from further attacks of appendicitis, but that if any portion remains pervious there is an increased disposition to other attacks. In nine of these cases the obliteration was due to an inflammation, in the others it was not determined whether the obliteration was inflammatory or involutionary in nature. In one case constriction was proximal to a concretion; in another the appendix contained mucoid material distal to the constriction; in one the end distal to the constriction contained pus.

The appendix was found kinked in twenty cases. Some of these bends and kinks were due to inflammatory adhesions; some were due to a shortened meso-appendix. In ten of these cases the kinking was inflammatory in origin; in the others, reports are too meager to state the causes. Constrictions of the appendix were noticed in nine cases. They were all due to previous inflammation of the organ.

In these reports no case of supernumerary appendix is recorded. No case of absence of the appendix not attributable to appendectomy or sloughing was seen. The absence, due to operation of the appendix, was noted twenty-one times.

The size of the appendix is more variable than its position. Kelly and Hurdon agree with Ribbert, Berry and others in placing the average length of the appendix at about 8.3 cm., or between three and three and one-half inches. Schlange, in von Bergmann's Practice of Surgery, gives the average length as 9.2 cm., equal to three and one-half inches.

In case 6656, the length of the appendix was ½ cm.

In case 6791, the length of the appendix was 3 cm.

In case 7073, the length of the appendix was 3 cm.

In case 6107, the length of the appendix was 21 cm.

In case 5616, the appendix was normal, but was nine inches in length.

In one case (patient, Isaac Williams, posted April 26, 1895), the appendix is recorded as having been ten inches long. Long appendices are frequently bent upon themselves or drawn up by the shortness of their mesentery into various bizarre forms, figure-of-eight, or spiral.

Foreign bodies were found in the appendix vermiformis as follows:

Grape seed, one case.

Fish bone (1½ inches in length), covered with concretions, one case.

Enteroliths, twenty-five cases.

By enteroliths we understand fecal material which has undergone desiccation. The ordinary or normal appendix may contain fecal material similar to that found in the adjacent large intestine. Bryant found fecal matter in 70 per cent of his adult specimens. In some of the cases reported above, the enteroliths were single, in others multiple. In case 5030 there were two large and several small concretions.

In these 3550 autopsies the appendix vermiformis was reported to have been the seat of tubercular lesions ten times: cases 3507, 6701, 5275, 5421, 6499, 6504, 6779, 6225, 5104, 5982. A fact worthy of note is that in each and every one of these ten cases the tubercular lesions in the appendix coexisted with tubercular lesions elsewhere in the organism; that in all of these cases tuberculous pneumonitis of one or other variety was invariably present. Not one of these cases of tuberculous appendicitis was primary. These were all secondary, either by continuity of tissue, as extension from tuberculosis of neighboring coils of intestine, or by vascular transplantation. We are forced to state that the tuberculosis of the appendix vermiformis is but exceptionally primary and isolated. In four of these cases the organ was free, was non-adherent; in six it was adherent to some neighboring structure. In some of these cases the tuberculous process in the appendix vermiformis had led to the formation of caseous areas; in others, to ulcer formation; in others, simply to the formation of tuberculous granulation tissue. In some the process was limited to the internal coats; in others, to the external coats; in others, it involved all the coats. In all these cases the tuberculous appendicitis was not productive of symptoms sufficiently marked to lead to its diagnosis during life.

Twice (cases 5305, 5912) the appendix was the seat of typhoidal disease. In both of these cases typhoidal lesions in other parts of the abdomen coexisted (intestines, mesenteric glands, spleen). In case 5305 there were submucous hemorrhages; in case 5912 ulcers were present.

In case 5272 there was a cavity between the folds of the meso-appendix communicating with the lumen of the appendix, and containing thick pus.

The appendix was found to be the seat of acute inflammation (non-suppurative in character, that had not been pus producing) forty-one times. In six cases pus was found in the cavity of the appendix, that is, in six cases we had an empyema of the appendix.

The appendix vermiformis was found to be the seat of neoplastic disease three times (cases 6200, 6178, 6002). In each of these cases the neoplasm was a carcinoma. In each of these cases the appendix had been involved secondarily by the neoplastic process. In each the pri-

mary tumor was in the stomach. Benign neoplastic or sarcomatous change in the appendix was not found in any case. In two of the cases reported the tumor was apparently secondary by vascular transplantation; in one secondary by extension by contiguity. (Appendix was adherent to stomach by tumor mass.)

The following shows the great improvement in the understanding of indications for operation in appendicitis, and in the performance of the various operations for this condition that has taken place during the last decade:

Between the years 1893 and 1896 there came to the autopsy table at the Cook County Hospital nineteen cases, which had been operated upon for appendicitis, and in which suppurative peritonitis was present; while between the years 1896 and 1905, inclusive, there only came to the autopsy table five such cases.

The operation performed in those days is best understood and appreciated by the following, taken from the post-mortem records:

Case of L. Jackson, March 20, 1895.—In right iliac region wound is found 7 cm. long, partly closed by sutures. Through this incision protrudes a loop of intestine and a gauze drain; appendix was found adherent to psoas, and had a perforation at lower third. (Operation for appendicitis.)

Case of L. Jones, examined February 10, 1895.—In abdominal wall in median line an incision of about four inches in length was found packed with iodoform gauze. Omentum and intestines found matted together. Appendix found bound down to psoas and red in appearance. Constriction about three-fourths cm. from tip. (General suppurative peritonitis.)

Case of J. G. Simons, February 4, 1893.—Appendix, colon and omentum found adherent to right iliac region. Appendix surrounded by granulating tissue. Looks, on separating adhesions, like a large ulcerating cavity.

Case of Joseph Kubat, April 7, 1895.—In right lower quadrant, eight-inch scar is found; omentum adherent to peritoneum under scar. Appendix present and adherent to abdominal wall.

These post-mortem records affirm the following facts concerning the appendix vermiformis:

1. That it is almost always an intraperitoneal organ; exceptionally, it is extraperitoneal, and then, usually, only partly so.

2. That it has been found in nearly every portion of the abdominal or pelvic cavities.

3. That it may form the contents or part of the contents of a hernial sac.

4. That its presence in a herinal sac does not render it immune from the lesions to which it is subject when normally located.

5. That it may be adherent to any intraperitoneal organ or structure.

6. That it may be adherent to some extraperitoneal structures, kidney, retrocolic cellular tissues, etc.

7. That pathological conditions have been found which seem to indicate that inflammations can extend from it to neighboring organs and structures to which it is adherent, and vice versa.

8. That in the diagnosing of obscure abdominal and pelvic conditions the probability of a previous or of an existing appendicitis must be considered.

9. That pus may be present within the cavity of the appendix, within the walls of the appendix, or the condition of peri-appendiceal abscess may occur.

10. That inflammations of the appendix may terminate in resolution, in adhesion formation, in obliteration of the appendix (partial or complete), in interstitial thickening, in gangrene, ulceration and perforation of the organ; may terminate in suppuration.

11. That one attack of appendicitis predisposes to other attacks, until complete obliteration of the lumen of the appendix has taken place.

12. That the condition of supernumerary appendix does not occur.

13. That congenital abscence of the appendix, if it occurs, is so infrequent as to be ignored, from a clinical standpoint.

14. That the appendix may vary in length from ½ cm. to 26 cm.

15. That the lodgment of foreign bodies in the lumen of the appendix is an infrequent occurrence, only two cases, excluding enteroliths, having been observed in 3560 cases.

16. That neoplastic disease of the appendix is uncommon. We are inclined to think that neoplasms of the appendix are almost always secondary, either by continuity or contiguity of tissue, or by vascular transplantation. We have never met with a primary case. Some primary cases, however, have been reported.

17. That this organ may be the seat of lesions of the same nature as can occur in other portions of the alimentary canal, viz.: typhoidal, tubercular, actinomycotic, dysenteric, etc.

18. That tuberculous appendicitis is almost invariably secondary.

19. That the lessened frequency during the last decade of diffuse suppurative peritonitis following operations for appendicitis is due, first, to more exact diagnosis; second, to earlier operation; third, to excision of the appendix and of its mesentery in cases not complicated by periappendiceal abscess; fourth, to better and more perfect technique on part of operator.

20. To limiting the surgical intervention in cases of periappendiceal abscess to incision and evacuation and drainage of the pus cavity, if the appendix be not easily accessible.

TALMA'S OPERATION FOR CIRRHOSIS OF THE LIVER.*

By Elsworth Smith, M. D., and N. B. Carson, M. D., St. Louis.

Mr. W. M. S., 35 years, molder by occupation, entered the St. Louis Mullanphy Hospital September 10th, 1905, giving at that time the following history:

Family history: negative.

Previous history: usual diseases of childhood.

No history of lues.

Habits: Has used alcohol to excess since eighteen years of age. From age of twenty-one to twenty-three years he was a barkeeper and during that time drank heavily. Since then it has been his habit to go on sprees of from seven to ten days' duration every six to eight weeks, during which time he would take no nourishment at all. His preference was for whiskey rather than beer.

Present trouble began one year ago last October, with what he thought was malaria. He experienced chilliness along the back, coming on about 6 or 7 o'clock p. m., followed by a fever at about 8 or 9 p. m., which fever continued through the night, passing off toward morning in a sweat. The sweating ceased last January, but chilliness and fever continued until about two weeks before his entrance in the hospital. Has not had any cough. Just about two weeks before coming to the hospital he first noticed the onset of a swelling in his abdomen. Has practically been confined to his bed for the past three months.

Before June last his appetite and digestion had always been good between his sprees. While drinking, he would in the morning have nausea with vomiting of greenish fluid. About the 10th of last June he vomited two teaspoonfuls of blood. No other history of hæmorrhage from either stomach or bowels. No hæmorrhoids.

Physical examination: Patient presents the typical picture of hepatic cirrhosis with his emaciated frame and his apparently large, fat abdomen, which is as large as that of a pregnant woman at full term. The distended superficial abdominal veins point to portal obstruction. All the signs are present of fluid in the peritoneal sack. The boundaries of the liver and spleen cannot be made out satisfactorily on account of the great abdominal distention, due to a large collection of ascitic fluid. Lungs and heart normal.

Urine: Specific gravity 1020; trace of albumen; no sugar; no casts.

September 13th. As patient has been suffering from pressure effects of ascitic fluid he was tapped today, and two gallons of fluid removed. Examination of this fluid from a cytodiagnostic standpoint showed prepon-

*Read before the St. Louis Surgical Society, January 17, 1906.

derance of endothelial cells, and small round cells. No tubercle bacilli found.

September 19th. Patient improved greatly after paracentesis, but now abdomen is filling again rapidly.

September 22nd. Two gallons and one quart of ascitic fluid were removed by tapping today. Examination immediately afterwards showed upper boundary of liver, at sixth rib, in the mammary line; indurated border of liver could be distinctly felt about one inch below costal arch, but no nodulations could be detected; lower border of spleen extends about two inches below margin of ribs.

September 29th. Despite treatment by way of diuretics and hydragogue cathartics, etc., abdomen is again filled and two gallons of fluid were removed today; and while paracentesis has appeared to afford relief for the time being, still patient has been slowly but steadily losing ground, so that Talma's operation is suggested to him, and as he gives his consent, he is transferred to Dr. Carson's service.

At the operation the diagnosis of hepatic cirrhosis was verified, and no evidence of tuberculosis found; and while prior to operation, from September 10th to September 29th, a period of nineteen days, paracentesis was required four times, since the operation on October 5th to this date, a period of three and one-half months, tapping has been called for only once.

His weight, which in June last was 118 pounds, and it must have been much less than that just prior to operation, was, on January 5th, 1906, 124 pounds. His average weight had been 150 pounds.

He is now able to go about everywhere without even the aid of a cane. Has a good appetite and digestion, sleeps well, and has no abdominal distress from ascites. There is still some fluid in the peritoneal sack.

The only thing patient now complains of is a feverish feeling at night, but the thermometer has not shown a rise over 99.2.

So far the good effects of the operation in this case are certainly quite apparent. In estimating, however, the results of the operation in general, we are met by rather conflicting statistics, due, it would appear, to a misconception, oftentimes of the purpose and the limitations of the procedure.

In the first place it should be clearly kept in mind that the operation is not for the relief of cirrhosis of the liver, but for only one of its symptoms, though, of course, one of its most important ones, and, therefore, the integrity of the liver cells must always be sufficiently retained to carry on the metabolic processes necessary to life; for the simple turning of the portal into the systemic blood current, will not, of course, remedy an intoxication due to deficient liver function. In fact, quite the contrary, for the operation has precipitated such a texæmia by diverting too suddenly from the liver blood charged with toxines destined to be destroyed in the liver pa-

renchyma. On the other hand, should there be sufficient liver tissue remaining to prevent such an auto-intoxication, a regeneration of liver cells can take place under the more favorable conditions of the newly established collateral circulation.

The operation, therefore, it would appear, should be made early, and some even advocate a resort to it in the pre-ascitic stage, if the diagnosis can then be made on gastro-enteric hæmorrhage and enlarged spleen.

Secondly. Talma's operation purposes to relieve only transudations into the peritoneal sack, and, therefore, the differential diagnosis must be clearly drawn so as to exclude all exudates from inflammatory processes, especially chronic peritonitis from tuberculosis, malignant disease. Especially must we have in mind tubercular peritonitis, which so frequently complicates hepatic cirrhosis, and in doubtful cases it would appear best to first tap the abdomen under aseptic precautions, and if the patient's condition be not urgent, to await the result of inoculation on the lower animal; though, of course, abdominal incision in tubercular peritonitis is, I believe, rather curative than otherwise.

Thirdly. We must remember too, that there is apparently an increasing number of clinicians who deny that ascites is due to portal stasis, and who rather consider it to be a product of a general toxæmia of hepatic origin, whereby transudation is favored of the serum of the blood through the vessel cells, developing a condition of lymphagogue action.

In support of their position they state the following facts:

First. That ascites does not occur early in the disease, when the pressure in the portal vein is highest and leads to gastro-enteric hæmorrhage from rupture.

Second. That experimental ligation of the portal vein does not develop ascites.

Third. Cirrhosis may exist for years without ascites, which may at last appear quite suddenly.

They also claim that the first effect of the operation is to increase the toxæmia by depriving suddenly a greater quantity of the blood of the antix-toxic liver action.

This, in fact, is shown in Eck's fistula. In this experiment the portal vein is resected in the portal fissure, the proximal end tied and the distal end short-circuited into the inferior vena cava, and as shown by Hahn, Nasse, Nencki and Pawlow in the day the procedure produces a condition akin to uræmia, especially if the animal be fed meat How then, can Talma's operation do good?

G. R. Turner and H. D. Rolleston (1899) have answered this query thus:

First. By somewhat diminishing the blood current through the liver it may enable the organ to deal more satisfactorily with the blood passing

through it, and thus reduce the toxæmia on which the ascites and other bad symptoms depend

Secondly. That the presence of vascular adhesions over the surface of the liver would relieve venous engorgment of the organ and so allow a more free supply of arterial blood, whereby the nutrition of the liver cells would be improved, and be placed in a better condition to undergo compensatory hyperplasia.

Thompson has suggested that the operation may prevent ascites by the simple method of producing universal peritoneal adhesions, and thus obliterate the peritoneal cavity.

That this is possible is shown by the cases of Dickenson and Weber, in which ascites disappeared, and cirrhosis and universal peritoneal adhesions were found at autopsy.

It seems, however, difficult to explain on the basis of ascites, in hepatic cirrhosis, being due to a general toxæmia that the dropsy, in the vast majority of cases should be limited to the area of distribution of the branches of the portal vein; though adherents of the toxæmic theory appear to claim that often the dropsy begins in the feet. This, however, has not been our experience.

In this connection it is of interest to note that efforts have been made to compensate for the loss of liver function and thereby control the serious toxæmic symptoms by administering to these patients fresh liver tissue or extracts, as in disturbances of the thyroid gland.

Cregny gave, in hepatic cirrhosis, one gramme of liver extract in milk, in addition to the ordinary diet, and seven grammes of nitrate of potash; with which treatment he obtained a cessation of hæmorrhages, of ascites and œdema.

With the same treatment Hirtz observed a good result in one case of hepatic cirrhosis (Cregny, *Medical Annual,* 1905), in which the organ became apparently almost normal. In two other cases he saw no greater improvement than with ordinary treatment.

Hirtz reported a second case subsequently, where a man suffering from alcoholic cirrhosis was cured by giving 100 grammes daily of fresh pig liver along with milk diet. In this case the urine rose and œdema completely disappeared; previously, under milk diet and calomel, no improvement had been noticed.

After the above considerations we are, perhaps, better prepared to appreciate the statistics on the operation, which are as follows:

Neuman,[1] in a case of hepatic cirrhosis with ascites curetted the parietal peritoneum and omentum and stitched the two together; after many months distinct dilatation of the vessels of the abdominal walls resulted, and ascites had not returned.

Rolleston and Turner[2] operated on two cases, in one of which ascites had not returned three and one-half months later.

The status of the operation as given by Packard and La Conte[3]—1901—based on 22 cases, is as follows:

Immediate death	7 per cent.
Ultimate death	7 per cent.
Unimproved	14 per cent.
Recovered	64 per cent.

Scherweneky[4] has reported a successful case.

J. B. Roberts,[5] two immediately fatal cases.

Herman Kummell[6] reported seven cases, with two deaths from exhaustion immediately after the operation, and two deaths some time later; while three survived, as did also their ascites.

Grisson operated on a case with a high degree of ascites who was afterwards able to work actively for two years before his death.

George Brewer[7] reports five cases with four fatalities. He, however, collected sixty cases from the literature, with 38 recoveries.

Baldwin[8] reported three cases of which one recovered and two died. In one of the latter the patient lived three and one-half months with no return of ascites.

In 1902 Grenough[9] collected 122 cases in which the operation had been made; after deducting 17 in which the disease was not cirrhosis, and one in which the result was not given, there remain 104; of these 31 died within thirty days of the operation, and 29 were in no way improved, so that sixty, or 57 per cent., either had their life shortened or else received no benefit; forty-four, or 42 per cent., were improved, and of these nine were living and in improved health two years after the operation.

Lejars[10] collected 78 cases with 36 deaths; disappearance of ascites in 28, and notable improvement in 14.

At the French Congress of Surgeons in the autumn of 1904, M. Monprofit had collected 224 cases, of which 129 were cures, 84 had died and 11 were doubtful.

Contrasting the worst and best aspects of the operation, as gathered from all sources, it would appear that the percentage of mortality would be somewhere between 40 and 60 per cent. The outlook, of course, on the old expectant plan of treatment is almost certain fatality.

October 5, 1905. Operation performed by Dr. N. B. Carson.

Anæsthetic chloroform. Abdomen re-prepared. Incision six inches in the median line of the abdomen from the ensiform cartilage to near the umbicilcus. The right rectus muscle was pulled to the middle line and the peritoneum opened.

Considerable ascitic fluid escaped from the abdominal cavity. The liver was somewhat enlarged and was also nodular, showing evidence of some contraction. Adhesions had formed between the liver and the an-

terior abdominal wall, and also between the spleen and the peritoneum. There was also adhesions about the gall bladder but no stones. The omentum was much contracted and shortened.

The upper surface of the liver and the adjacent surface of the peritoneum was freely rubbed with a sponge on a holder. The round ligament was sutured to the anterior abdominal wall, thus bringing the surfaces of the liver and the peritoneum closer together. A portion of the omentum was then stitched up between the liver and the peritoneum, another portion was brought out of the peritoneal cavity and sewed between the rectus muscle and the peritoneum. The wound was closed. A small suprapubic incision made in the median line and a cigarette drain inserted. Moist bichloride dressing applied.

October 27, 1905. The abdomen was tapped on account of the accumulation of ascitic fluid and five quarts of a turbid fluid withdrawn. The abdomen has not been tapped since that time.

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CRIMINAL ABORTION.*

By John M. Grant, M. D., St. Louis.

It is a lamentable fact that a large proportion of the women of today object to raising children. So serious—in fact, so appalling has the condition become that the President of the United States has considered it his duty to sound a warning note.

My experience is, that over 35 per cent. of the pregnant women try to terminate the pregnancy artificially; some observers make the percentage a great deal higher.

One of the reasons advanced by the women is that there is no life in the fetus until the movements are felt, therefore no crime against the laws of God and of man has been committed. Dozens of reasons are given, such as poverty, drunken husbands, social obligations, ill-health, "have been

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told by physicians that parturition would be fatal," and so on down the whole category of excuses.

We are often told, "Oh, yes, Doctor, I am anxious for children, but this is not a convenient season. The World's Fair is coming; a trip has been planned; or a new home is being built."

It is thus that the women try to justify their acts.

As civilization advances, the crime increases. In the populous centers the percentage of criminal abortions is much greater. Those of us who were born in the country, in the sparsely settled districts, can well recall the large families. In my boyhood in the country, every family had from six to twelve children; to be a barren woman was considered a disgrace. How different we find it in the large cities! Families of from one to three children are the rule. If it were not for the large families of the foreign element, and the distant country regions, the death rate now would probably almost reach the birth-rate. Woe betide any country whenever such a calamity happens. That nation is as certain to decline as the night is certain to follow the day. Criminal abortion is not the only cause for small families, but it is beyond the scope of this paper to discuss any other. There is a disposition to place all the blame for the abortions upon the women. They doubtless deserve the lion's share of censure, but not all of it. The husband is sometimes the more guilty of the two.

Vividly do I recall the case of Mrs. K., whom I was called to see and found in collapse; she had attempted to produce abortion at the urgent request of her husband. Evidently the crochet needle which had been used had perforated the uterus. She died within six hours from the time I saw her, never recovering from the collapse. Death occurred within twenty-four hours after the attempted abortion. Of course, such sudden and violent deaths are rare.

Another woman attempted to justify herself in producing abortion by declaring that her husband threatened to leave her if she had any more "brats." He said, "Other women get rid of them and you have got to do it."

These two cases are only mentioned to show where some of the blame lies.

Pregnant women are encouraged in these acts in various ways. One can hardly pick up a daily paper without reading dozens of thinly disguised advertisement advising women what to take and whom to consult in order to become "regular." Again women go around and tell each other of so-called harmless devices and remedies, and to consult certain midwives and doctors. It is thus young women are encouraged to jeopardize their own lives and health, without a thought of the crime being committed.

Dr. Frederick Griffith, of New York, has bought, in the public places

of Paris, instruments to produce abortion. He bought them of street venders, in drug stores, grocery stores, in fact, everywhere. He says that anyone can buy them just as easily. In this country, they can be obtained not so readily, but without any difficulty.

Thousands and thousands of abortions are produced, of which physicians never hear. Many women make a regular habit of introducing a catheter or some other instrument, if the menstrual flow is a few days late. This is sometimes done for years with impunity. Others go regularly and have their wombs "opened" as they express it. Many drugs are advertised as being "sure regulators." The consumption of these is simply enormous. I have several times been called to see women who were desperately sick as a result of taking these drugs. There is no doubt that abortion is sometimes produced by drugs. The woman is made severely ill, and the fetus poisoned, or its vitality so lowered that the uterus eventually expels it.

Tansey tea, pennyroyal pills, and some forms of mercury seem to be the favorite remedies, but abortions produced by medicines are comparatively few; the vast majority are the results of the use of instruments.

I have treated over 250 cases of criminal abortion. Of these, only ten were in young, single women. Of course, we are bound to sympathize with the young girl who commits the criminal act in a desperate effort to save herself from everlasting disgrace; but why—I say it with all due reverence—why, in the name of God, will married women, some of whom, at least, have happy homes, good husbands, and pleasant surroundings, with all that goes to make an ideal existence, why? I say, will they commit such heinous offenses? Yet statistics prove beyond all doubt that the very people who are in the best shape to care for large families seem to fight the hardest against having them.

Perhaps 75 per cent. of the abortions seen by me responded promptly to treatment. These cases were seen early before any severe infection had started. In each case the uterus was promptly emptied and thoroughly douched. When possible to introduce it, the finger makes the ideal dilator, and the best curette. The fewer instruments used the better it is for the patient. The curette is liable to open a new focus for infection. The uterus can be swept thoroughly by the finger, and the douche will remove any little particles left. Of course if pregnancy has only existed for five or six weeks and no infection begun, a blunt curette is perfectly reliable.

In about 15 per cent. of my cases, the patients had already had repeated chills, hot fevers and were violently infected. In these cases the uterus was, of course, emptied and cleansed. Antistreptococcus serum administered, repeated douches given, bichloride poultices with hot stoves kept over the abdomen, and absolute rest enforced. If necessary, morphine

with strychnine was administered hypodermically. So far as internal medication went, small doses of calomel were my favorite.

These cases usually recovered in from three to twelve weeks, but there was a certain percentage of cases in which an exudate was thrown out, and an enormous amount of inflammatory thickening developed. In three of these cases the abscess that formed bursted into the vagina, and the patients made good recoveries. In three, I opened abscesses through the vagina and the patients ultimately recovered.

Mrs. S. sent for me in May, 1898. She was 25 years old and had always been healthy. She had three healthy children. In the two years prior to this, her womb had been opened three times by a notorious abortionist, and she had aborted with difficulty and had consulted no physician. Five days before I saw her, she had visited this abortionist and had her uterus opened. She immediately began to have fever and pain. She had missed one menstrual period and another was due. For fifteen weeks her temperature ranged from 102 to 105; an inflammatory mass developed in her pelvic cavity and extended almost to the umbilicus. The treatment was carried out along the lines already suggested. After being in bed nearly five months, she was able to sit up. It required nearly fifteen months before she obtained a fair degree of health. About a year ago I examined her and found the uterus slightly movable, being fixed by many adhesions; but she was in good health. It is needless to say that she has never been pregnant after that abortion.

Mrs. L. gave this history: The day before sending for me she had inserted a catheter into the uterus. Shortly afterwards she had a chill, followed by fever and violent pains. When I reached her, the temperature was 105, pulse 140. She was instantly chloroformed and the contents of the uterus removed. A piece of the catheter about one inch long was extracted with the fetus from the uterus. The uterus was emptied and douched. Her temperature remained around 106, and she died within 36 hours. There was no injury to the uterus. I know that the patient was well before the attempted abortion, because I had been in the house every day for two weeks attending a boy injured by a street car.

There are two classes of people who are guilty of producing these abortions. One class consists of the notorious midwives and doctors who for love of filthy lucre murder these unborn babes. These persons are so debased and so lost to all that is true and noble in life, that they are held in utter contempt and abhorrence by every right thinking man.

The other class consists of certain members of the medical profession, who are generally considered to be men of repute. It is a disgrace to our profession that any member of it should have so conducted himself as to justify the suspicion that he was an abortionist. Yet if common report be true, certain men are guilty. As proof of this I report the following instances:

About a year ago, a young eighteen-year-old girl called at my office and with great embarrassment, and confusion, acknowledged that she was three months pregnant and wanted something done at once to produce abortion. Following my usual tactics, after satisfying myself that she was pregnant, I first explained to her the hideous criminality of such an act, and then told her to go home at once and tell her mother her condition, and to marry the young man who was responsible for it. She promised to obey. Some two months afterward I was called to the house to see another member of the family. The mother thanked me profusely for giving the girl such good advice. But she had taken her to their former family physician, who felt very sorry for her, and for a good fee produced an abortion. Think of it, a supposedly reputable member of our profession committing such an act. No less than six women I have attended for abortion informed me that the act had been committed by a certain physician. These women were unacquainted with each other, and their statements must have been true. Several similar instances could be mentioned, but these will suffice to prove my point.

It is very difficult to get the women to reveal by whom the abortions were committed. They will seldom tell in the presence of a third party, and always impart the information in strict confidence. The majority of women refuse utterly to tell. Knowing these facts, the abortionist follows his infamous business almost with impunity. It is a notorious fact that abortions are being daily committed, yet how seldom is the guilty party convicted. The physician may be morally certain as to the identity of the guilty party, but legal proof is wanting. If the victim lives she refuses to testify in court; if she dies she cannot. Ante-mortem statements can seldom be obtained. Occasionally a woman boasts of the fact that she can have the best medical talent if trouble follows her abortion. This at once suggests the question, what is the proper stand for a physician to take when called to an abortion. Is he to assume the role of public prosecutor and act as though she were a criminal? Or, should he in these cases, as in all others, follow the mandates of his noble profession, to relieve human suffering, to prolong life and when possible to save life? This is a question open to debate. My personal opinion is, that no matter how much the physician may despise the abortionist or his victim, it is his first duty to attend that patient regardless of all other considerations.

The question arises, "What can be done to at least check, if not stop the ever-rising tide of abortion?"

The physician, the minister, the legislator, can each do something towards stemming the tide.

The physician must teach first of all that life exists from the moment of conception. The acquisition of this knowledge would prevent many women from committing such acts. He must teach the woman not only the danger to her life, but the long train of ailments that often follow;

he must convince her that no reputable physician will produce abortion, that she places herself in the hands of the unskillful and the unprincipled; she must be told that when the time comes, as it often does, when she desires to have children, it may be too late. The grossly insulted uterus either refuses to become pregnant, or it promptly expels the fetus. Many of us have attended women, who, after losing an only child, would give all their earthly possessions to have another; we would find that they had systematically endeavored to prevent conception or had produced abortion until it was no longer possible for them to have children.

Ministers of all religions have great influence with their followers. So far as I know, the Catholic church is the only one that persistently and systematically fights this evil. This is one of the reasons for the rapid growth and prosperity of this church. If all of the churches would combat the evil with the same vigor and perseverance, the good accomplished would be of inestimable value to our country.

Legislators should enact laws that would help. First of all, newspapers and periodicals should not be allowed to publish any of the thinly-veiled advertisements encouraging abortion.

A conference of legislators and physicians could doubtless devise some laws that would prove salutary in checking the evil.

Most of you have, doubtless, read the powerful article entitled, "Let Us Go Back," recently written by F. Hopkinson Smith. In this matter under consideration, the present generation must be taught, "Let us Go Back," to the principles of former days, and it will be better both for us and for posterity.

MASSAGE IN NEUROSES.

By J. F. Menestrina, M. D., St. Louis.

Neurasthenia is defined by neurologists as a general neurosis dependent on an exhaustion of the nervous system. It is an exaggerated and ever ready excitability of the nervous elements with an absence of functional resistance; with a tendency to a sudden tired feeling and a rapid loss of nervous energy.

Neurasthenia has been called, par excellence, the disease of the century.

The greatest number of neurasthenics are found in the large business centers, where the tumult of life, excitation of the spirits, ambition to succeed above all others, entail sacrifices of body and mind which bring about a rapid nervous exhaustion.

That this condition is influenced by heredity, no one questions. It is a well-known fact that a large percentage of these sufferers consists of literary men, scientists, students, business men, professional men, who so culpably neglect themselves and plunge into exaggerated mental

work. This excessive intellectual fatigue united with insufficient rest is usually not adequately compensated for by nutrient nitrogenous alimentation, restoring sleep, and out door exercise and recreation. As a rule these people rarely spend over 15 minutes at a lunch counter, talking business, while crowding bits of cold food into their stomachs. The pace these poor unfortunates set cannot but cause the above described results. It is eminently considered an American disease, for nowhere is it so alarmingly prevalent, as in this country.

As a rule neurasthenics are anemic. The nerves being poorly nourished by alteration in the essential constituents of the blood, are frequently subject to series of explosions of energy in the form of neuralgias. There is no doubt that an exhaustive state of an acute infective process also paves the way to this condition, and that auto-intoxications have an important relation in the etiology of neurosis in general. So much has recently been written by Vaghen, Conca and others in regard to this, that a resume would hardly seem necessary. It would be well to mention that these authors attribute the cause of these affections primarily to digestive derangements, such as, a diffused catarrhal state of the stomach with all its sequels of pirosis, acidity, ectasis, coprostasis, diarrhea, etc. They, however, admit that the chemistry of digestion is known to us only to a very limited extent. What relation the intimate chemistry of this vital organic function bears to disturbances of the nervous system and its relative absorption, constitutes as yet a missing link in the chain of our present etiological knowledge.

Other sequels to auto-intoxication are the different forms of neuralgias and the more severe forms of neuritis.

It would be well to mention a few of the causes of these painful conditions, namely, traumatism, resulting in direct mechanical injury to the nerve through blows, wounds, tumors, pressure, etc.

Exposure to cold, tuberculosis, syphilis, bone diseases, blood infection due to bacterial toxins. These conditions are also found as sequels to typhoid fever, diphtheria, malaria, metallic poisons, such as lead, arsenic, mercury and vegetable poison, such as alcohol, opium, tobacco, etc.

Malassimilation of food due to hurried or defective mastication, combined with mental worry, breathing of vitiated air, insomnia and a series of shocks to the nervous system through excesses is in my estimation the chief cause of neuroses in general. Individual idiosyncrasy must be present, however.

These dyspeptic neurasthenics and suffering patients get as a rule, but little sympathy from the average physician and we frequently turn them away from our offices through lack of tact or inability to retain our interest and patience during their long recital of ailments, and get to the bottom of the real cause of their neurosis. They would be the easiest

patients to retain if patience and judgment were used. They represent a class that is daily on the increase. They are usually in good circumstances, comprising the cream of our men of commerce, educators, and professional men, in short, the brain workers. They are entitled to and should receive our interest and sympathy.

Let us pause for a moment, and see what becomes of them, when they find no relief from us. Perhaps some of our readers have been rebuked occasionally by these patients that their remedies failed to relieve their sufferings, when on visiting an osteopath, they were promptly benefited.

The eyes of our regular friends must by this time be opened to the fact that a set of men claiming osteopathy as their art, are trying to elbow their way into the ranks of the profession. Its exponents are pretty well scattered through all the states and the success they have attained thus far, is surprising.

They are daily increasing in number. Next year's curriculum I understand has been increased to four years, at their institution in Kirksville, Mo.

The majority of our regulars still regard osteopathy as a fad; they claim it will have a short life. Perhaps it may, but their cult originated about 25 years ago, and from present prospects it bids fair to continue to thrive.

Their method of treatment consists of systematic massage, joint movements, nerve stretching and "leg pulling." Neurasthenics usually flock to every new fad, but in this particular one, they rush in, and no doubt receive some benefit.

The osteopaths have a pretence or smear of anatomy, physiology, pathology, chemistry, psychology and they claim a very liberal medical education.

As a matter of fact they have little or no knowledge of any of these subjects, but they understand and study the wants of these patients, and no doubt the results they obtain are through massage and passive movements, a lesson the medical profession must learn, and its members will do well not to underestimate its value. The majority of the intelligent regulars have as yet sadly neglected to give scientific massage a conspicuous place in therapeutics, and are content to dismiss a patient with a prescription, usually a sedative or hypnotic, without getting after the real cause of his trouble, and favoring its removal. No greater mistake can be made by the profession to persist in this pernicious, old practice, many poor sufferers from neuroses have been started on bad drug habits through our haste in prescribing, before investigating the origin of the morbid condition.

As stated above auto-intoxications play a conspicuous part in the etiology of neurosis. Elimination seems to be the logical cure. No bet-

ter eliminant exists than massage, such as is used and practiced by Swedish therapists. Thanks must be given to these confreres, who for years have taken the lead in this line and have carried it to the point of perfection.

Massage is said to have been originated by the Chinese 3000 years B. C. The only authentic record we have is a French translation of a Chinese work, "The Cong-Fon of the Tro-dse," that appeared in press about 135 years ago. This was probably the foundation of the present Swedish method of massage and Swedish movements since so elaborately systematized by Ling. It had been in use by the Hindoos and Persians, and the ancient Greeks and Romans were not slow in recognizing its value. These sturdy ancient races owed a great deal of their mental and physical attainments to gymnastics, massage, bathing, etc. They believed in *Mens sana in corpore sano.*

Today massage and Swedish movements has a recognized place in our modern therapeutics. No doubt some of the better informed of our profession direct patients to masseurs, but how lamentably few. The range of usefulness of massage in various forms of neurosis is so unlimited and its results are so marvelous that it is a pity that the majority of the profession do not take it up. As an eliminator of waste product such as toxins, auto-intoxication, etc., and an up-builder of cellular tissue it has no equal. It is especially useful in all forms of poor nutrition and deranged digestion, neurasthenia, rheumatic conditions and neuralgias in general.

Laymen still confuse massage and Swedish movements with the treatments given by the so-called bath house "rubber," magnetic masseur or masseuse with lady assistant so often brazenly advertised in our daily press. It is our duty when possible, to correct these impressions.

It would be to our interest if the profession in general began to realize that we have sadly neglected this most important branch of our modern therapeutics, especially with regard to neurasthenics. While we have been blind, they have been wide awake, and in the nascent new fad of osteopathy, no doubt have sought benefit for their ills. Without any question a certain mental impression is made on these sufferers by their methods, but I insist that massage and gymnastics are responsible for three-fourths of their brilliant results. These osteopaths unquestionably have appropriated, or as Swedish masseurs claim, robbed them of their method, simply adding a few artistic contorsive and spectacular joint stretchings to a wise look and a superficial display of technical knowledge in fundamental branches of medicine to enhance it. The offices of these new fad exponents are usually neatly and comfortably equipped, with fine office outfits, luxurious couches and general attractiveness; what they lack in knowledge is more than made up in appearance.

The chief clientele that patronize them is of the better element, an

element that by our lack of tact, sympathy and patience we drive away daily from our offices.

Some of our neurologists have been for years advocating the general use of massage and Swedish movements. Dr. Frank Fry of this city as late as 16 years ago, in a very able article, read before the St. Louis Medical Society, called the attention of the profession to the wide range of usefulness in neurosis of this most important branch of modern therapeutics. When we take into consideration that neurosis in general is increasing to an alarming extent it is pertinent to ask the profession to wake up, shake away that apathy and critically investigate this vital condition. It is really surprising to me that this has not been done before now and that our regulars stood by watching with a don't care fashion the growth of osteopathy without making the slightest attempt to stem its tide and counteract its effect.

They get results and that is the secret. The practical question now arises: What can we do to remedy the damage we unwittingly inflicted upon ourselves?

The problem is not hard to solve. Direct your neurasthenics, dyspeptics, etc., to a proficient masseur or masseuse, one who is an adept in the Swedish art, with the understanding that either masseur or patient keep under your directions. Manifest to these patients marked interest, consideration and patience. Take notes of their improvements as frequently as necessary and you will enlist their confidence. They are tractable patients, but you must not lack tact yourself. If treated in this manner you will very seldom lose them.

The main point to bear in mind is that the etiology of neuroses in general is namely that of auto-intoxications. Elimination is the logical remedy, massage is the eliminator. Remember that an hour each alternate day, spent on a comfortable couch under the deft manipulation of an experienced masseur will store up more nerve energy and eliminate more toxic substances from a system clogged by sedentary habit and overeating than you can by means of all the drugs in the pharmacopeia. Do not understand me, however, to say that it is a panacea for all ailments, let me not be misunderstood—but in conjunction with careful diet, hygiene, tonics and out door exercise you will surely benefit your patients and retain their interest.

With the possible exception of walking, no other form of exercise need be indulged in. The hour spent in massage is a perfect rest under relaxation and is a sublime restoring tonic, it is a good all round investment. It is superior to osteopathy on all lines, and as a part of our therapeutics, deserves a better recognition by the general profession. A good list of reliable masseurs and masseuses should be kept on file in every physician's office. If all of our regular friends will handle these neurasthenics in the above described way, no fear need be entertained of any more cases going to osteopaths.

EDITORIAL.

THE ECONOMIC FACTOR IN DIAGNOSIS.

It is an admitted fact that the present age, if given any name descriptive of it, would be called the economic age. It is the age above all others that material advances have been made. Medicine, as a part of the civilization in which its activity is permitted to be exercised, can be looked upon as sharing this common feature. The isolation of medicine, so noticeable in previous periods, is no longer possible. For good or evil, medicine has taken its place in the currents of the times and must be viewed as a part of them. From its practical side, medicine deals with either a unit of society or with a potential unit of society. The social unit, when it is the subject of disease, may be looked upon as having a certain number of possibilities. It may, as a result of morbid processes, be so incapacitated as to become a social burden permanently stricken off the roll of active factors. It may be temporarily removed from the class of active units and returned again in its former state, or, again, it may be restored, weakened in its strength and less capable of withstanding the stress of active life. In any one of these possibilities the physician becomes a determining factor, and often upon him depends the possibility which later develops. The thorough understanding of the nature of the disablement is the first step toward its removal or betterment. This means, of course, diagnosis. It is therefore essential that the physician in any case is bound to take advantage of every facility which medicine affords to arrive, as soon as possible, at the correct diagnosis, because in certain diseases interference is successful or not depending upon the amount of time elapsing between the onset of the disease and the effort at removal. Cancer and tuberculosis may be mentioned as two striking examples of this contention. Both are probably in the beginning localized diseases and limited ones. A cure can be obtained in a large percentage of cases provided the process has not advanced much beyond the initial stage. In other words it is possible to replace the subjects of these two diseases in the class of active units from which they were taken. A man in active life represents a certain economic value to the state and to preserve this value in increasing ratio, if possible, must fall within the province of the physician as regarded from the civic side. It is no longer possible for a physician to regard his patient as his sole property to dispose of as he sees fit, nor to regard the diagnostic problem presented as his personal problem, to be solved by whim, prejudice and whatever ability he might be in possession of. He is

bound in this larger view to use all the methods which medicine offers for the understanding of his case because his case after all, is a factor in the economic side of the community. The surgeon's appeal for earlier diagnosis contains much truth though perhaps it may be admitted that his altruism is not more marked in this instance than that of the internist. Whatever objections to advances in other parts of medicine may be made there should be allowed none to progress in diagnosis.

The gist of this contention is simply that a patient should represent to the physician not only an individual who comes to him for relief, but likewise a unit in a social fabric for whose long continuance in activity he must share a certain responsibility. This view, somewhat socialistic perhaps, would tend to broaden a physician's outlook and make him feel that he is responsible not alone to the family and friends of the patient, but in a larger way, to the state for the care of a unit of activity which comes to him in the guise of a patient.

COMMENT.

REGENERATION IN MAN AND OTHER VERTEBRATES.

The regeneration after a loss of whole portions of an avertebrate and vertebrate organism has been a subject for much study and speculation. Some 150 years ago Spallanzani first devoted his attention to it. The number of observations has increased considerably up to date; besides in avertebrates we know of its existence in fishes, amphibia and reptilia and to a slight degree in birds, but it has never been observed in mammals. F. H. Morgan has made this phase of the question the starting point of an attempt to give a rational suggestion for an explanation. Why do mammals not regenerate lost members of their bodies? Why do other vertebrates that have ceased to grow, begin to regenerate with great rapidity when a part is removed? If the latter question is turned around and we ask why an animal stops growing after a certain period is reached, the problem appears accessible to solution. That the digestive capacity for food does not play a role, as was asserted formerly, is denied by experiments made to establish a relation between the amount of food and the rapidity of regeneration in animals deprived of certain members of their bodies. Starved and overfed animals regenerate in the same way. Morgan introduces the conception that regeneration is only one phase of the general phenomenon of growth. It is observed that regeneration differs in rate according to the different levels. If a fish's tail is cut off at the end the regeneration is as long in becoming established as it is when the whole tail and even a portion of the vertebral column is removed. The same obtains for the tails of salamanders, lizards, etc. In avertebrates, for instance the common earthworm, the removal of the posterior segments is made good much slower by regeneration than if half of the body or all of it up to the last segments of the anterior pole is cut off. It has been believed that these regulation processes are due to a vitalistic and dominant principle in living matter. This, of course, as Morgan emphasizes, is no explanation, but on the contrary a stop to further elucidation. Such an assumption, however, is not necessary and in this part of his discussion the author enlarges an idea for regeneration which pathology years ago used as a factor physically understandable and accessible to investigation, and in growth in general accounting for the stopping of growth at a certain point. We know that the cells of almost every tissue and organ when disturbed in their organic connections begin to proliferate and multiply and are restrained from overgrowth only by the restitution of the tissue to its original functional condition. If the disturbance is such that a rearrangement becomes im-

possible, the restraint does not occur and the proliferation goes on. Morgan expresses this condition thus: "It seems to me not improbable that the inhibition is caused by a definite response to a condition of internal pressure or tension of the cells on each other. When this condition is reached further growth comes to an end. When we alter this particular pressure by removing a part, growth begins again." The nature of this pressure cannot be explained at the present stage of our knowledge. Nevertheless it rids us of the assumption of a formative force. Indeed, he says "the formative force itself is nothing more, if my view is correct, than the response of the cells to the pressure relations of the neighboring cells. This response determines the cellular differentiation and the differentiation is determined by the mutual pressures of the cells upon each other." Although this is purely hypothetical we must, arrived at the limits of our knowledge, have provisional hypotheses in order to continue investigation.

The fact that mammals never show even an attempt at regeneration of lost parts is accounted for by the higher differentiation of their tissues and by the different rate of rapidity of regeneration of the single tissues forming the lost part which does not allow of the production of a normally constructed part. Morgan attributes great importance to the very low rate of regeneration of osseous tissue, which in mammals is the essential element in the regeneration of a normal member of the body. It is a peculiar, seemingly confirming fact that regeneration only occurs in stages of animal development in which the supportive elements are formed by cartilage that the same species loses this quality as soon as the adult stage is reached with osseous structures. The regenerative capacity of a tadpole is great, while that of a grown frog is seemingly absent. The hope of the author is that in the future it might be possible to influence the rate of regeneration of the different tissues in a way which will produce a uniform course of growth of all of them, thereby establishing a mutual pressure of the different tissues upon each other identical to the original one, thus leading to the formation of an identical part.

At the present time we have no means of judging to what degree a possibility exists or will exist to give a basis of facts to these hypotheses. The value of Morgan's discussion lies in the emphasis he lays on the essential dependence of one cell upon the other by their mutual influences without which a regularity of formation does not exist. He does not enter into the necessary consequence following from this relation, a consequence, beginning to be felt more and more in biologic research, that finally the complex organism is not built up by cells, but becomes for physical and chemical problems divided into compartments, cells, subserving single needs of the whole. The individuality of an or-

ganism cannot be explained in any other way; the formation of an organism from a single cell proves it. We can now hardly go beyond the assumption of a formative force as it is called, that is, a power directing the growth and function of the single cells of the organism. As long as we consider cells the units which in their complex arrangement form an individual organism, an understanding is possible only by a force extraneous to the cells and nevertheless directing them. This, from the point of view we call scientific, is out of the question. We will learn to interpret it scientifically when we learn to call cells nothing but little portions of a complex machinery inserted as the working of the machinery calls for them. Only in this way will be possible what we call an understanding of the nature of life and of the pathologic processes occurring during its existence. For this, if we can call it evidence, the modern view of the development of series, or organisms is an evidence; the changes obtaining do not concern the cells but the whole. The writer of this comment knows only too well the futility of individual opinions, but these opinions are always and necessarily the consequence of the uniform trend of work done at a given period. And there is no doubt that this opinion is at the bottom of the more and more emphatic assertion of the impossibility of explaining the nature of life by the agglomeration and combined action of individual cells.

MEDICAL AND SURGICAL PROGRESS.

INTERNAL MEDICINE.

IN CHARGE OF

JESSE S. MYER, M. D.

SCORBUTUS.—Senator (*Berlin. klin. Wochenschr.*, No. 17, 1906).—Although scurvy is generally classed as a disease of the blood, but few examinations of the blood and of the blood making organs by the new method of Ehrlich have been reported. The author recites a case in detail with the blood findings and the postmortem findings.

The blood showed a rapid decrease of the erythrocytes down to one-sixth of the normal number, reaching 750,000. There was an equally pronounced decrease of the hemoglobin down to 11 per cent. There was also a gradual leucocytosis, with diminution of the lymphocytes, a poikilocytosis, polychromatic degeneration of the erythrocytes, and normoblasts. These findings correspond practically to those noted in a single post-hemorrhagic anemia with a sub-acute or chronic course. In addition to the above a few myelocytes and myeloblasts were found.

The post mortem also revealed just such changes as might occur in severe hemorrhage and a high degree of anemia, without any specific characteristics.

In this case the anemia was due to the existing hemorrhage which characterizes the disease. The observation of the case throws no light upon the true nature of the disease. It is not known whether the disease is due to a primary affection of the blood, or of the blood vessels.

THE DIAGNOSTIC VALUE OF THE LEUCOCYTE FORMULA IN PERTUSSIS.—Churchill (*Jl. Am. Med. Assn.*, May, 1906) lays much stress upon the early diagnosis of pertussis, both because of the serious character of the disease and because of its dissemination in the early stages. He collected 100 cases of whooping cough in which differential blood counts had been made, with the view of determining the diagnostic value of such a count. He arrives at the conclusion that a general leucocytosis is present in almost all cases of whooping cough; that a lymphocytosis is found in about 85 per cent. of cases at some time during the course of the disease; that a lymphocytosis is found even more certainly during the early or catarrhal stage, over 90 per cent. showing the phenomenon at this time. The presence, therefore, of a lymphocytosis in a child with a hard, persistent cough is a factor of great diagnostic value. It is also of prophylactic importance inasmuch as it can be used to prevent the spread of the disease by leading to the prompt isolation of the patient. The age of the child must be taken into consideration in estimating the importance of the leucocyte count.

A Case of Cardiac Neurosis and Arteriosclerosis Following Trauma.—Goldscheider (*Berlin. klin. Wochenschr.*, April 23, 1906) reports the case of a man, aged 26, who, following a severe injury of the head, developed a marked hypertrophy of the heart and arteriosclerosis. He had been perfectly well up to the time of the injury and had never presented any evidence of such a disturbance. The author considers this proof positive of the theory that such conditions may follow trauma.

Tuberculosis of the Oesophagus.—Kummel (*Muench. Med. Woch.*, March 6, 1906,) reports a case of tuberculosis in which the autopsy revealed a most remarkable involvement of the oesophagus and yet comparatively few clinical symptoms pointed to its existence. He explains the rarity of oesophagical infection in tuberculosis by the rapidity with which sputum is swallowed and also by the thick pavement epithelium which is not very susceptible to tubercular infections. In cases in which the infections occur we are justified in assuming that there must have been previous injury to the mucous membrane which admitted infection. Cases are referred to, for instance, in which the oesophagus became involved on account of previously existing disease of the oesophagus, such as carcinoma.

Observations Concerning Diabetes and Glycosuria.—Salus (*Centralblatt f. Grenzgebeite Med. u. Chir.*, No. 5, 1906,) presents an exceedingly interesting article concerning diabetes and glycosuria and their relations to pregnancy, heredity, narcosis, etc. This article is accompanied by literature references which greatly enhance its value.

PATHOLOGY AND BACTERIOLOGY.

IN CHARGE OF

CARL FISCH, M. D.

The Change of the Neutrophilous Blood Picture, After Arneth. —E. Pollitzer (*Deutsche Med. Woch.*, 1906, No. 12.)—Pollitzer has made exhaustive control investigations regarding the phantastic doctrine promulgated by Arneth about the change of the polynuclear leucocytes especially in regard to their nuclei under pathologic conditions. Pollitzer shows that Arneth's assertions are based on an insufficient staining method. His opinion was that for instance in infectious diseases the "number" of nuclei of these cells was in a much higher percentage than in normal blood only one or two. The method used by him does not allow of a correct interpretation and Pollitzer with a more exact procedure has shown that such a change does not exist. This flaw in Arneth's conclusions has been felt long since; that it has not been especially emphasized is due to the fact that Arneth's theory so far only exists in his numerous publications and that with two or three exceptions nobody has deemed it worth his time to follow him with the hope that he could

accept his views. To base such far reaching speculations as Arneth does, for the course and nature of pathologic processes on the size and greater or lesser nuclear lobulation of the polynuclear leucocytes, is an undertaking that a *priori* is not promising.

The Significance of Streptococci in Milk.—P. G. Heinemann (*The Jl. of Infect. Dis.*, vol. 3, No. 2, April, 1906).—If Heinemann's observations are confirmed by control-observations they will bring a small revolution in our methods of milk investigation. His general conclusions are, shortly, as follows: The ordinary bacteria producing lactic acid fermentation are bacillus aerogenes var. lacticus and streptococcus lacticus. The latter agrees in morphologic, cultural and coagulative properties with pathogenic, fecal and sewage streptococci. It can be found in cow feces, on the external surface of cows and in milk of all stages of subsequent handling. Souring of milk is caused by the co-operation of both groups of bacteria and is perhaps, favored by peptonized bacteria always present in market milk. Gas is produced by the aerogenes but its development is checked by the growth of the streptococcus. Both of them produce acid; the aerogenes is more sensitive to a high acidity and is regularly overgrown by the streptococcus. Sterile milk can be made to produce acid fermentation by inoculation with streptococcus. The constant presence of streptococcus therefore in market milk and milk collected with special precautions will be a stimulus for further investigation in sanitary work.

The Toxins and Antitoxins of Poisonous Mushrooms (Amanita Phalloides).—W. W. Ford (*The Jl. of Inf. Dis.* Vol. 3, No. 2, April 6, 1906).—A review of the careful investigations of Ford, that have led to exceedingly interesting conclusions must be omitted here. The conclusions formulated by the author are as follows: It can be stated that the poisons of amanita phalloides (a fungus in appearance similar to the edible mushroom) of which the phallin of Kobert is the hemolytic constituent, are of the nature of toxins in that they act on the animal body after a definite latent period, produce lesions with all the characteristics of bacterial intoxication in general, and produce immunity in susceptible animals by injection of non-lethal doses. Such animals will withstand a considerable multiplum of fatal doses and their serum possesses antihemolytic and anti-toxic qualities so that a serum can be obtained neutralizing in the amount of 1 cc 10 fatal doses of the toxin. The future will have to show whether serum of higher potency can be produced. For an attempt to produce such sera the justification lies in the comparatively high number of fatal accidents resulting from the consumption of these fungi. The statistics compiled in different countries count many hundreds of deaths from this form of poisoning. The time in which the intoxication leads to the fatal end is in adults 6 to 8 days and children 3 to 4 days, so that the administration of serum within this time appears feasible, especially since in all cases the diagnosis is made very early after the symptoms appear from the history of the patient.

Experimental Investigations about the Anti-Bodies Against Retinal Tissues.—C. Hess and P. Roemer (*Archiv. f. Augenheilk.*, vol. 54, 1906).—It is impossible to give in detail the results of the investigations made by Hess and Roemer on the specific differences of the immunity reactions of the various elements composing the retina. As far as pathologic conditions are concerned the following interesting results may be shortly sketched.

The filtrates of pigmented epithelium and of retina of cattle, hog and man inhibit the hemolysis of the normal serum of a certain species on otherwise susceptible species of blood corpuscles. The antihemolysin is specific for the species. Injection of the fragments of a fresh retina (preferably that of cattle) into guinea pigs results in the formation of lysins for the rodlets and of the agglutinins. For rodlets of other species the action of the lysin is less marked so that it must be concluded that in the different species of mammals different receptors are present in the elements serving perception. Lysin reaction and agglutinin reaction could be demonstrated here also as independent of each other. The sera of cattle, of goose and of chicken agglutinate the rodlets of all animals examined by the authors, even those of the same species. In the serum of cows, lysins for the rodlets of cattle could be demonstrated by the addition of complement taken from guinea pigs. It was possible to make antilysins and antiagglutinins, and it was highly probable that the substances normally present and those produced by immunization were identical. The interest of the observation lies in the demonstration of the specific difference in qualities, demonstrable by immunity reaction, in cellular elements so closely united in an organ like the eye.

About the Influence of Neutral Salts on Staining Capacity and Fixation of Nervous Tissue.—E. Mayr (*Hofmeist. Beitr.*, vol. 7, Heft 12, page 548-674).—Mayr was stimulated by an observation of Bethe that nerve fibers kept for twenty-four hours in so-called physiologic salt solution underwent a pronounced dissolution, to study more closely the influence of salts on the histologic structure. The results he obtained may be made accessible to imterpretation by the assumption that the tissues consist of an inhomogeneous system in the sense of physical chemistry, that it consists of various and multiple phases of solid, colloid and fluid state that are present in a state of equilibrium. The latter is changed by the addition of a salt solution, a change that after some time is restored to the normal condition. This changed condition is fixed by the addition of alcohol. The tissue constituents behave toward salts like albumin or glutin solutions; they differ from each other according to their chemical character. The primary staining capacity runs parallel to the behavior toward salt solutions. In this respect the difference between fibers of the spinal cord and the peripheral fibers is very interesting as is the influence that blood has on the integrity of the histologic structure of the spinal cord. There is no doubt that many suggestions can be made from this observation as to technical points in histology.

Contributions to the Coagulation of Blood with Regard to the Action of Hirudin.—A. Schittenheim and R. Bodong (*Archiv. f. Ex-*

perim. Path., vol. 54, 1906, pages 217-244).—The authors used as material the blood of horses preparing from it fibrinogen and blood platelets. For tissue juices the extracts of liver and kidney of the horse were used, and in some experiments of human, canine and bovine blood or of the organs of the dog or of the calf. The results obtained have the effect of generally confirming the ideas of Moravitz, but with one deviation, namely, that concerning the substances present in platelets and in their action on each other producing coagulation. Moravitz only found in the platelets the simultaneous presence of thrombogen and thrombokinase. The authors could show that there was present in the blood platelets, also a substance that was coagulable, in other words a substance that represented a stage in the formation of fibrin. Blood platelets can coagulate spontaneously so that, according to the authors' opinions, these formations contain all elements necessary for coagulation. They were unable to show the capacity of tissue-extracts to produce coagulation by components that are necessary for a typical coagulation. As to the effect of the addition of hirudin to blood it has been asserted that it was brought about by the action it exerted on the thrombogen; to speak with Ehrlich that an antithrombin and an antikinase played the part; Schittenheim and Bodong found that neither the thrombogen nor the kinase influence directly the hirudin but that there must be present in the blood plasma a substance capable of neutralizing the excess of hirudin. This substance cannot be thrombogen.

The Viscosity of Blood.—D. Heubner (*Archiv. f. Experim. Path.*, vol. 53, pages 280-301).—Heubner's paper will set to sober consideration the recent enthusiasm on the valuation of the modern determinations of the viscosity of the blood. The author in the beginning discusses the validity of Poisecuille's law on the flowing of fluids that either do or do not wet the wall of the vessels containing them. He demonstrates that the stream of chloroform as compared with that of water and alcohol is the greater as the capillary tube is more narrow or longer. For water and for alcohol there is an inhibiting influence which does not obtain to the same degree for chloroform. A specific reaction between the surface of the glass and the fluid, not the same in all of them, must exist. This shows that the law mentioned above does not hold in all cases.

It has been impossible to demonstrate that the circulating blood in vessels follows the same law as the water in glass capillaries. The relations between viscosity and circulation are not yet established; measurements refer only to the inner friction of the blood itself not to the external friction on the walls of the vessels. However, both of them act in combination at all times; therefore conclusions as to a greater or less amount of work done by the heart made from the figures found for the viscosity in rapid or slow circulation, are not justified. In regard to the relations between viscosity and assimilation the author makes valuable suggestions but they cannot be detailed here. It may be mentioned that blood made non-coagulable by the addition of hirudin shows the same coefficient of viscosity as the plasma of the same blood without hirudin.

DIAGNOSIS.

IN CHARGE OF

ALBERT E. TAUSSIG, M. D.

ENTEROSPASM SIMULATING APPENDICITIS.—H. P. Hawkins (*Brit. Med. J'l,* 1906, No. 2)—While advocating prompt operation in most cases of appendicitis, the writer believes nevertheless, that at present the appendix is often removed unnecessarily. There is a tendency to look upon every pain in the ileocoecal region as appendicitis and to operate. Often, the attacks of pain remain uninfluenced by the operation for the reason that they were not produced in the region of the appendix at all. Intestinal neuroses, simulating appendicitis, occur, though rarely, and mucous colitis is not infrequently mistaken for the same disease. The greatest of these sources of error, however, is enterospasm. This condition may affect any portion of the gut but occurs most often in the coecal region and in the descending colon. It is found most frequently in neurasthenics and may present a very various picture. It may produce definite attacks of acute pain, but more often appears as a dull, more or less vague, pain, sometimes lasting for months and usually referred to the left or right iliac fossa. In the latter case it is apt to lead to a false diagnosis of chronic appendicitis; in the former to one of disease of the sigmoid flexure. The writer reports a number of such cases, wrongly diagnosed, in some of which the spastic stenoses of the gut could be observed during the operation.

THE DIAGNOSIS OF PELVIC APPENDICITIS.—Armstrong (*Brit. Med. J'l,* 1906, No. 2)—In some cases of appendicitis the exudate lies immediately above or below the entrance to the pelvis, so that it is chiefly the pelvic peritoneum that is involved. Such cases are often overlooked since McBurney's point is not tender, nor can considerable pain be elicited by pressure anywhere upon the abdomen. Only the bimanual examination makes the diagnosis possible and the latter should therefore never be neglected in obscure cases of abdominal pain. The mortality of these cases is high since, on account of the difficulty of diagnosis, they usually come to operation too late.

A HITHERTO UNOBSERVED SOURCE OF ALIMENTARY PENTOSURIA.—v. Jaksch (*Zeutralbl. f. inn. Med.,* 1906, No. 6).—In connection with the report of a case of alimentary pentosuria, v. Jaksch calls attention to a new source of error in the ordinary tests for sugar in the urine. The unfermented fruit juices which are often drunk in large quantities, both by the sick and well, may contain considerable amounts of pentose. After the ingestion of such juices an alimentary pentosuria will be produced, and if large quantities have been consumed (e. g. 1 to 1½ liters of apple juice) the pentosuria may last for 24 hours. Such a urine will give a positive reaction both with Trommer's (Fehling's) and with Nylander's test and in order to distinguish this perfectly normal condition from one of true glycosuria, it is necessary to do the fermentation test. As is well

known, no fermentation will take place when the reducing power of the urine is due to the presence merely of pentoses. This possible source of error, it would seem, should especially be kept in mind in life insurance examination.

A Very Delicate Test for Bile Pigment.—Krokiewicz (*Muench. med. Wochenschr.*, 1906, No. 11).—Three reagents are needed for the performance of this test:

1. A one per cent. aqueous solution of sulphanilic acid.
2. A one per cent. aqueous solution of sodium nitrate.
3. Pure concentrated hydrochloric acid.

The first two reagents should be kept in dark colored glass bottles. The test is performed as follows:

Into a test-tube pour equal parts of the first two reagents, shake well and pour away all but a few drops, so that 0.5 ccm. at most remain behind. Add a similar quantity (0.5 ccm.) of the urine, or other fluid, to be examined, and mix well by shaking. The fluid takes on a ruby red color which, upon the addition of 1 or 2 drops of Hcl. and dilution of the mixture with distilled water, becomes amethyst-violet in color. If the urine or other fluid is very rich in bile it should be diluted with several volumes of distilled water (up to 10) before testing. The amethyst color is very distinct and relatively permanent, but has no distinguishing characteristics when examined spectroscopically. The reaction is positive only in the presence of bilirubin or of one of its less oxidized derivities. It is not produced by any of the drugs that are excreted in the urine, is not affected by the presence of indican and has no connection with the factors responsible for Ehrlich's diazo-reaction. The writer claims that it is more than twice as sensitive as Gmelin's test or that with iodin and is surpassed only by Huppert's test. The latter, however, is much more troublesome and requires 100 ccm. of urine, whereas the above test is simple and can be performed with a very few drops. The writer recommends it not only for urine but especially for other fluids, such as stomach contents.

A New Method of Staining Blood Spreads According to Romanowsky.—Richard May (*Muench. med. Wochenschr.*, 1906, No. 8).—The blood stains now most in use, those of Wright, Leischmann, Giemsa, etc., depend upon the simultaneous action of methylen blue, methylen azure and eosin. The writer has modified these stains as follows: The blood spreads are first stained with a ¼ per cent. solution eosinate of methylen blue in methyl alcohol (practically Jenner's stain) and then differentiated for one minute in distilled water. Thereupon, without being dried, they are covered with one drop of ½ per cent. aqueous solution of methylen azur. The latter first decolorizes the blue nuclei of the leucocytes and then stains them with its peculiar reddish tint. The entire process can be observed under the microscope and takes 2 to 4 minutes. The spreads are then washed, dried and mounted. This method is said to give uniformly clear and brilliant stains and to be useful not only in blood work, but also for staining micro-organisms, in particular the spirochæte pallida.

Determination of the Lower Border of the Stomach.—Schuele (*Arch. f. Verdauungskr.*, Bd. IX, No. 6).—The only reliable method of determining the gastric outlines is by means of radioscopy. Of the clinical methods for determining the position of the greater curvature, none are trustworthy. The least faulty seems to be percussion with the patient standing erect. Inflation of the stomach is apt to lead to over-distension and so to the false diagnosis of gastric dilatation.

THERAPEUTICS.

IN CHARGE OF

WALTER BAUMGARTEN, M. D.

The "Home Sanatorium" Treatment of Consumption.—Pratt (*Johns Hopkins Bull.*, May, 1906) reports the methods and the results of the "Emanuel Church Tuberculosis Class," which was organized in July, 1905. He takes the attitude expressed by Dr. Osler, that "the vast majority of all tuberculous patients must be treated in their homes." The chief difficulty in the treatment of these patients is to secure the necessary discipline, and herein lies the weakness and the lack of success by the general practitioner in this class of cases. Such patients must be convinced of the necessity of the rules of life prescribed, then taught in detail how these are to be carried out, and, most important of all, carefully watched from day to day until the prescribed measures are accurately and unswervingly followed out. It means the education of not only the patient but of the whole family, and this task devolves upon the physician.

The care of a tuberculosis patient consists in attention to minute detail, and success depends upon an accurate adaptation of principles to the individual case. "It should never be forgotten that it is the individual, not the disease, that needs treatment." The reason that the results of dispensary treatment have been wholly unsatisfactory is due to the lack of careful supervision, and the lack of the strict discipline maintained in sanatoria. "The difference between our (Pratt's) method and that of the tuberculosis dispensary is essentially this: that the tuberculosis dispensary gives a relatively small amount of care to a large number of patients, while we give a large amount of care to a small number of patients." This has been Pratt's effort. He has been supported financially by Emmanuel Church (Boston) and since July 1, 1905, has taken care of fifteen cases of tuberculosis at an expense of $513.00.

The "class" should be small in number, not more than 25, so that the physician may know the intimate conditions of his patients' circumstances and surroundings. No one is accepted until the clinical diagnosis has been confirmed by sputum examination or tuberculin test. Cases are received in all stages. The applicant for treatment must promise to give up all work, lead the out-of-door life and obey all rules. It is impressed upon the patient "that the most profitable work for a sick man is to get well." A complete clinical history is taken and a physical examination recorded.

Once a month the lungs and sputum are examined. The patient is visited in his home and it is determined whether it will be possible to carry out the open air treatment at that place. If there is no roof, balcony, piazza, or yard available, the family must move to a tenement where one of these is to be had. The exact financial status of the family is learned and instruction is given in the prevention of the spread of the disease to other members of the family. The patient is at first visited daily until it is certain that the rules are being faithfully and intelligently observed. The patient is placed in a protected balcony, or in a 7x7 foot wall tent on the roof or ground. Here he remains except for food, exercise (when permitted), and bath. The greater part of the day is spent in a recumbent or semi-recumbent position in a reclining chair which is furnished each patient. The food consists chiefly of milk, bread, butter, fruit and oil. Two or three quarts of milk are consumed by the patient. No exercise is permitted for several weeks. The walking is begun, five minutes morning and afternoon, and gradually more, the duration being controlled by the effect upon the body temperature. The walking is accurately measured by the watch. An important feature in enforcing discipline, and encouraging the patient to maintain it, is the use of an individual record book in which all the detailed steps of the day's doings (bath, food, rest, exercise, pulse, temperature, quality or sputum) are entered. Pratt has been materially assisted in his supervision by a nurse who has given her entire time.

SURGERY.

IN CHARGE OF

WILLARD BARTLETT, M. D.

HYPERNEPHROMA; CARCINOMA; SARCOMA.—Neuhauser (*Archiv. fur Klin. Chir.*, Bd. 79, heft 2).—After reciting the histories of nine of these somewhat unusual cases the author gives the result of rather extensive study on this subject. He comes to the conclusion that both of these suprarenal tumors are the result of an embryonic enclosure in the sense which Cohnheim used the term, the result of portions of the suprarenal gland being included in the kidney substance. This may not be the only cause of such tumors, but it must be regarded as the first one of importance. We have on the one hand cancer, or on the other sarcoma, just as it happens that the new growth springs from the epithelium on the one hand, or from the structural connective tissue on the other, there being, of course, both of these elements in the displaced mass.

URETERO-CYSTOSTOMY.—Pons (*Revue de Chir.*, No. 3, 1906).—In the case under discussion, an abdominal hysterectomy had been made for cancer of the uterus, when it was discovered, before closing up, that extensive involvement of the right broad ligament made it necessary to widely excise the same, including a mass, which completely surrounded the ureter on the same side. After this had been done, an incision was

made in the bladder, the free end of the ureter carried down the same, and sewn in place with catgut. The external wound was sewn up tight, and healed without further incident. The patient was able to leave the hospital 18 days later, after a cystoscopic examination had demonstrated the fact that urine was pouring into the bladder through the new opening, as well as through the old one on the opposite side.

A Visit to the Mayos at Rochester, Minn.—Bernays (*New York Medical Journal,* April 21, 1906).—This article describes graphically, and most accurately, what can be learned in a week spent at the Mayos' clinic. By perusal of it one who has not been there can get a better idea in a short time of what to expect from such a visit that can be obtained in any other manner known to the reviewer.

Cleft Palate.—Dollinger (*Zent fuer. Chir.,* No. 13, 1906.)—A most valuable hint is given to facilitate the suture of cleft palate, after the edges have been freshened and the lateral incision for the relief of tension made as contemplated in the Langenbeck operation. The author uses two needles for each suture, introducing them from the mouth side, and tieing the two ends within the nose before tieing the two ends within the cavity of the mouth, thus greatly facilitating the most difficult step in the operation. After this a strand of thread is hooked over the loops within the nose and brought out through one of the nostrils to facilitate removal of the sutures. A good drawing makes an understanding of this most valuable suggestion easier.

Treatment of the Bites of Copperhead Snakes by Local Freezing, Combined With a Frequent Application of a Potassium Permanganate Solution.—Crun (*Jour. Amer. Med. Ass'n.,* May 12, 1906).—There is something fascinating about snakes for most people, and the many who read every article on this subject that they can get their hands on, will, no doubt, take delight in the article under consideration, since it deals with a venomous serpent of our own country, as well as the means of combating the deadly effects of its bite. The author has had experience with an average of two cases per year since he has been in practice, and has finally found a way of treating the same successfully. He freezes the bitten area and then makes two parallel incisions, one through each of the tooth marks, and soaks the extremity in a strong solution of the potassium permanganate. After this, a wet pack of the same is used, the fluid being frequently renewed. He has had eight of these cases and thinks that the freezing alone does some good. He reports three cases. The author seems to think that very young snakes are especially poisonous the venom differing from that of older specimens, and it does not seem that large snakes are more to be dreaded than their smaller relatives of the same species.

Appendicular Femoral Hernia With Notes of One Hundred Cases.—Wood (*Annals of Surgery,* May, 1906).—The author has had two of these rare cases, and together with ninety-eight from the literature, he gives a resume of one hundred, in which the appendix alone was

found in the sac of the femoral hernia. There has, no doubt, been many others in which the appendix, plus other portions of the intestine, were thus situated, but not considered in this report. The appendix is found once in about fifty-three cases of hernia of various sorts, this knowledge being derived from a study of over three thousand cases. It is interesting to note that cæcum and appendix have been found in far the greater number of cases, in young subjects. However, when the appendix alone has thus been discovered, it has usually been in elderly subjects. This interesting and valuable article contains an immense amount of information, which can scarcely be treated in a review, hence, the same will be appreciated in the original by those who are especially interested in this subject.

ORTHOPEDICS.

IN CHARGE OF

NATHANIEL ALLISON, M. D.

AN ANALYSIS OF 152 CASES OF HALLUX VALGUS IN 77 PATIENTS, WITH REPORT UPON THE OPERATION FOR ITS RELIEF.—Wilson (*Amer. Jour. Orth. Surg.*, Jan., 1906).—Any long continued maintenance of position of the big toe that prevents normal function and posture will produce hallux valgus. The shoe that tends to produce deformity of the great toe is the shoe which is too short, and which has a high heel or a pointed toe. Also pointed stockings, or those which are not sufficiently long, will produce this deformity. The greatest factor of all, however, is the everted, pronated position of the foot in standing and walking. In an examination of 397 women, very few of whom were below the age of 50 years, every individual showed more or less divergence of the great toe from normal position and function. Three hundred and twenty of them presented no evidence of pain, or marked deformity, or faulty use of the feet. Seventy-seven were found to have more or less marked degrees of deformity. Clinical inspection showed apparent exostoses in 141 feet, while in 11 there were none. Observation of the feet in standing and walking showed pronation in 121 feet, only 33 approaching normal in this respect. In 132 feet the position in walking was markedly everted. In 14 cases there was no overlapping of toes. In 16 cases there was overlapping by the big toe. In 124 cases there was overlapping by the smaller toes. In 36 feet there was destruction of the arch, a smaller percentage than would be expected in patients where there is eversion and pronation of the feet associated with hallux valgus.

The author recommends excision of the internal lateral aspect of the distal extremity of the metatarsal bone in all cases where bone operations are desirable or necessary. He reports four successful cases treated in this manner. Particularly is this procedure applicable to those cases where there are exostoses, or where the protrusion of the distal end of the metatarsal bone appears like an exostosis.

Epiphyseal Separation of the Great Trochanter, With Report of Cases.—Thienhaus (*Annals of Surg.*, May, 1906).—Poland in 1898 collected the literature on this subject, and was able to discover only twelve cases of epiphyseal separation of the great trochanter, up to that date. The author, in a thorough search of the literature has been unable to find another case cited. His case is that of a school girl, who received direct violence to the region of her great trochanter, through an accidental fall. The case was at first considered contusion of the hip. After four weeks she was unable to stand without extreme pain at the region of the great trochanter, and was always inclined to rotate her leg inward, and to hold it in a slightly flexed position. A skiagram taken at this time revealed a partial separation of the great trochanter. A well padded plaster bandage was applied, with slight pressure, on the trochanter. At the end of six weeks, recovery was complete. Epiphyseal separation of the great trochanter usually occurs between the ages of seven and seventeen years. Clinically the cases are divided into two classes, those in which there is a complete separation of the epiphyses, including the periosteum and tendinous parts attached to the great trochanter, and those in which the trochanter is separated from the body and neck of the bone, but no tearing of the periosteum and tendinous parts has taken place. The author's case belongs to the second class. Diagnosis depends upon the age of the patient. The fact that pain is caused by pressure on the region of the trochanter, and inability of the patient to use the limb on account of pain extending down the thigh, while at the same time active and passive motion in the hip-joint is possible in all directions, suggests this diagnosis. The author calls attention to the fact that many of the reported cases died from suppuration taking place at the seat of the injury. Apposition of bandage, or by direct operative procedure, is advised as treatment.

Tendon Operation for Flat-foot.—Gocht (*Zeit. fur. Orth. Chir.*, Band 14, Heft 3 & 4).—In flat-foot due to the changed position of the bones, especially the os calcis, there is usually a changed condition in the length of the tendons which cross the plantar arch. The tendo Achillis is shortened on its outer side, but lengthened on its inner side, on account of the inward rotation of the os calcis. The author reports a case of flat-foot, in which the usual methods employed for this condition gave no relief of symptoms. He then operated upon the tendo Achillis, making it longer, and inserting it further inwards on the os calcis. This procedure, coupled with the ordinary means of support, gave the patient relief.

Calf Deformity in Club-foot Cases.—Ryerson (*Amer. Jour. of Orth. Surg.*, Apr., 1906).—In examining a series of well treated congenital club-feet in young adults, the author makes the following observations: The feet are in excellent shape. Varus, equinous and even rotation of the astragalus, are sufficiently corrected. The lengthening of the tendo Achillis by repeated tenotomy and stretching, however, has allowed the bellies of the gastrocnemeus and soleus to retract upward to such an extent that the calf is far above its normal position. Function is not disturbed by this, but the leg is thin and ugly, and in unilateral cases there is a noticeable asymmetry. The author attributes this condition to the

repeated cutting and retraction of the tendo Achillis practiced in these cases. In young infants the safest procedure is to divide the tendo Achillis, in order that the equinous may be corrected. If repeated cuttings are necessary, the author advises that the two tendinous heads of the gastrocnemeus be divided near their origins on the femoral condyles. A small longitudinal incision at the inner edge of each hamstring group on a level with the middle of the condyles can be retracted, exposing these tendons. They should be isolated with a grooved director from the hamstring tendons, and from the external popliteal nerves. This operation does not afford as great a lengthening as does tenotomy of the tendo Achillis, because the soleus remains intact. The object of the procedure is to allow the main belly of the calf to remain as nearly as possible in normal position, where, by suitable exercise, it can be brought to a reasonable degree of development. The procedure is especially suitable to cases where previous Achillotomy has been performed, and where additional lengthening is deemed advisable.

Observation on Broken Necks.—Sayre (*Amer. Jour. of Orth. Surg.*, Apr., 1906).—All cases of broken neck are not necessarily fatal. Contrary to the popular impression, many get well. Fracture of the cervical spine does not necessarily involve laceration of the spinal cord, nor impairment of its function through pressure. The author reports 11 cases of broken neck. Of these, one died within a few hours after the injury. Two remained paralyzed in the lower extremities. One required support to his head at the time when last seen, but with this support had good control of his arms and legs. Two had perfect control of their muscles, except for slight stiffness in the neck and slight torticollis. Four had absolutely perfect results, and one is still under observation. Two of these cases resulted from diving into shallow water. One was from a blow on the back of the neck while in a swing; one from a fall from a hammock; one from a railroad accident; two from falls from trees; one from a runaway, and one from a fall downstairs. The result of the treatment of these cases led the author to believe that the best results are secured by immediate reduction of the fracture, and immobilization in plaster of Paris helmet and corset, applied if possible in suspension. Liquid plaster of Paris may be poured around the head and neck, while the patient is horizontal. In applying the bandage to the head, it is necessary to put a roller bandage in the patient's mouth, to allow room for opening the latter, or else there may not be enough room to allow the patient to eat. The X-ray is of the greatest assistance in the diagnosis of these cases. Support should be continued for at least three months. Attempts to allow patients to leave the bed with the neck unsupported earlier than this are apt to result in pressure paralysis. If complete readjustment of fragments can be secured, a perfect recovery without deformity or restriction of movement may be anticipated, unless the cord has been lacerated at the time of accident.

GENITO-URINARY SURGERY.

IN CHARGE OF

H. McC. Johnson, M. D.

The Ultimate Results of Kidney Fixation.—Carstens (*Jour. A. M. A.*, May 12, 1906.)—As a more or less movable kidney seldom occurs without other morbid conditions of the body, it is often very difficult to tell which of the various symptoms found in a case are produced by a movable kidney, and which are produced by the other pathologic conditions; so that the author has gone over his last thirty-two cases in which the kidney was apparently the only trouble and in which there were no other serious complications. He has written letters both to the patient and the family physician and here incorporates their replies. The author has observed that fixing and decapsulating a loose kidney relieves, and often cures, what nephritis may have developed in the organ. Nor does fixing a floating kidney mean that you get it into the exact position where it was and should be, but by fixing it high and as near to the original site as possible you prevent it pulling on or irritating other organs and the solar plexus of nerves; you prevent a kinking or twisting of the ureter. The author's mortality has been nil. He seems justified in concluding that movable kidney can be permanently fixed by proper technic, and that undoubtedly many disturbances of digestion are caused by movable kidneys, probably causing irritation of the sympathetic nervous system, perhaps of the solar plexus. Fixation of a loose kidney will relieve some digestive disturbances, and many of the nervous symptoms are relieved after a short time. Of course, a proper diagnosis must be made and a kidney found to be the cause of the trouble beyond any reasonable doubt. Nor can the fixation be expected to relieve symptoms caused by other organic diseases, such as gall stone, involvement of the appendix, constipation of the bowel, etc.

Preliminary Note on Epididymotomy for Blenorrhagic Epididymitis; Based on Sixty-five Cases.—Bazet (*Am. Jour. Urology*, May, 1906).—The greatest and quickest relief in the treatment of blenorrhagic epididymitis is accomplished by epididymotomy. Like appendicitis this affection ought to be considered a surgical one, as in its evolution the morbid process is contained in a closed cavity and the septic secretions cannot be drained. In all cases we have pain, fever, swelling and a decided leucocytosis. Once epididymotomy is performed the good effects are immediate; pain stops, the fever falls, leucocytosis subsides, there are no relapses and the cure is rapid. The testicle is not primarily affected; if it does become involved, it is by propagation and to a small extent, the chief lesion being in the epididymis, which is increased in volume two to four times, and in its cavity we find nodules the size of a lentil or a pea, containing a puriform liquid; these nodules are abnormal dilatations of the epididymis, plugged with a mass of leucocytes imbedded in coagulated serum. The tubes appear permeable. The operation is performed as follows:

An incision about one inch in length is made through the ligamentum scrotalis over the globus minor and carried downward into the cavity of the epididymis. The nodules are exposed and punctured if pus is present, tension relieved and the walls of the epididymis stitched to the skin. The wound is packed with gauze, impregnated with 1-10 per cent. ichthyol and glycerine and the organ well supported. The wound heals in a week; the patient is able to be up in from 4 to 7 days. The gonococcus was found present in one-third of the cases. There has never been any atrophy, hernia, necrosis of the testicle nor any mortality.

Pathology of Tuberculosis of the Kidney.—Whitacre (*Cleveland Med. Jour.*, April, 1906).—The following points are dwelt upon: (1) Primary tuberculosis in the kidney is a well demonstrated fact. (2) The infection of the kidney occurs through the blood. (3) Genital and kidney tuberculosis may occur simultaneously and consecutively from hematogenous infection, but ascending infection is not an important factor. (4) The lesion is unilateral in a sufficient number of cases to give us our first important finger-board to treatment. (5) The opposite kidney remains free from tuberculous infection for a long time. (6) The clinical course is toward progressive extension to other parts of the kidney and the body.

Ureteral Calculus.—Deaver (*Ann. Surg.*, May, 1906).—Since the accurate methods of making a diagnosis in urinary surgery have been in vogue, the frequency with which urinary calculi are met with, has become very widely appreciated. They are prone to be arrested at three points in their course; two inches from the pelvis of the kidney, as the ureter bends forward over the psoas muscle; at the brim of the pelvis, where it dips down across the bifurcation of the common iliac artery; and close to the vesical orifice of the ureter. The point that chiefly concerns us is to determine at what point of the ureter the stone has lodged, and while the author regards the X-ray as of much value in locating the stones, he must conclude that it is the rule of surgery in doubtful cases to first explore the kidney through the loin and to pass a sound down the ureter before concluding the operation. The two most valuable aids to diagnosis are tenderness at the site of impaction and information gained by a technically perfect skiagraph. A skiagraph to be of value in these cases must throw a shadow of tissues less dense than the least dense calculus, and it is necessary to see the shadows of the psoas muscle to make sure that no calculus is present. It seems to the author that the dangers which may ensue from neglect of ureteral calculus are greater than those which attend its removal by operation even though the calculi produce no symptoms. The extra-peritoneal route is preferred. Details of five interesting cases are given.

A Simple Device for Irrigation of the Bladder.—Ehrenfest (*Jour. A. M. A.*, May 21, 1906.)—By means of air pressure, fluid is forced out of a bottle exactly as in Fowler's bottle used for hypodermoclysis. The fluid is conveyed through a rubber tube to the bladder. By the interpolation of the three-way stop cock the solution can be alternately injected into

and removed from the bladder by corresponding turning of the handles of the stopcock. The advantage of the instrument consists in that the whole apparatus can be thoroughly sterilized by boiling. The amount of fluid injected into the bladder can be easily determined at any point. The bladder may be repeatedly emptied and irrigated without getting any air whatever into it.

URETHROSCOPY.—Mark (*Am. Jour. Urology,* May, 1906.)—In speaking of urethroscopy in general and the advantages to be gained therefrom diagnostically and therapeutically, the author considers the air-dilating urethroscope of great advantage over the non-dilating instrument.

With this instrument the folds of the urethra can be obliterated without producing traumatism and the resulting hemorrhage in the posterior urethra especially, which interferes with the view. Again a more extensive mucous surface is brought into view and points in a considerable area may be contrasted. A minimum amount of manipulation is necessary, and if the urethroscope is brought beyond a point to which it is desirable to return to, the air dilates the urethra beyond the distal extremity of the tube, which may then be pushed back without difficulty or discomfort.

GYNECOLOGY AND OBSTETRICS.

IN CHARGE OF

HUGO EHRENFEST, M. D.

DEATH FROM UTERINE FIBROMYOMATA.—Pellanda (*These de Lyon.* Rev. *Jour. of Obst. of Brit. Emp.,* April, 1906.)—From a study of 171 cases of death directly caused by uterine fibroids the writer arrives at conclusions which are quite different from the views almost generally held by American and a large number of German gynecologists. He arranges the causes of death as follows: (1) *Cachexia* in 5.2 per cent. This state is brought about by such conditions as compression of the abdominal viscera, continuous hemorrhage, slow infection, cardiac and renal lesions, etc. (2) *Hemorrhage* in 6.4 per cent. It is very exceptional that a patient succumbs exclusively to the effects of an excessive loss of blood. (3) *Infection* in 49.5 per cent. It is the most common cause of death and in the majority of cases appears to depend on association with labor and abortion. (4) *Compression of abdominal and pelvic viscera* in 25.8 per cent. (5) *Thrombosis* of the pelvic venous sinuses, pulmonary embolism, cardiac lesions and sudden syncope in 11 per cent. There were furthermore three cases of torsion of a pedunculated subserous fibroid.

The author thinks his study of fatal cases shows that death directly due to fibroids is rare. More patients die from post-operative complications than die from the tumor itself. In his opinion the operative mortality is between five and ten per cent, *i. e.,* too high to justify the advice to extirpate every fibroid on diagnosis. "The surgeon is more dangerous than the tumor." The operation should be reserved for those cases with

symptoms immediately or prospectively dangerous, for those with tumors increasing after the menopause, and for those where the excessive development of the tumor or the exaggeration of the symptoms render life unbearable though not placing it directly in peril.

Rupture of the Vaginal Fornix During Labor.—Saks (*Zentralbl. f. Gyn.*, 1906, No. 17.)—Complete rupture of the vaginal fornix during labor (kolpo-porrhexis) is a not very common occurrence. Hugenberger, in 1875, was the first to recognize the true nature of this serious injury and to differentiate it from uterine rupture. In 1891 Szcrepkin was able to collect 80 reports of kolpo-porrhexis and in 1905 Kaufmann added 82 new cases.

The case recorded by Saks is unique in that this rupture occurred twice in the same patient during two succeeding confinements. After the first labor a tear was found reaching from the left through the posterior into the right fornix. The hand could easily be introduced into the abdominal cavity. Three years later at full term the child is extracted after version has been performed on account of alarming symptoms which suggest a uterine rupture. A laceration is found completely separating the uterus from the left and posterior vaginal fornix. An iodoform-gauze strip is introduced. Patient recovers slowly.

Painless Labor.—Bruno Wolff (*Arch. f. Gyn.*, vol. 78, H. 2.)—It is a well known fact that women who are suffering from tabes or a transverse myelitis, will pass through an absolutely painless labor. Olshausen first called attention to the fact that a labor, as a rule, is less painful if the cervix is soft and succulent, and more painful if it is hard and rigid. He explains by this fact the observation that the uterine contractions usually cause comparatively little pain in cases of placenta previa centralis, and, on the other hand, are extremely painful in old primigravidæ. Decidedly rare are cases in which labor, in absolutely healthy women, proceeds with so little pain that the patient is not even aware of the fact that she is in labor.

Such a case of entirely painless labor in a primigravida, 28 years old, is described by Wolff. This patient was absolutely well and a most careful examination did not reveal any symptoms of either tabes or myelitis or even hysteria.

Malignant and Benign Degeneration of Uterine Myomas.—Winter (*Zeitsch. f. Geb. und Gyn.*, vol. 57, H. 1.)—A simple myoma is an essentially benign growth. In his personal experience he met only with twelve cases of myoma with corporeal cancer, and only in four cases the diagnosis has been made previous to operation. Whenever a myoma presents uncommon symptoms such as bleeding after cohabitation, hemorrhages in the menopause, a sanguinolent, pinkish discharge, severe pain independent of menstruation, etc., a cervical cancer should be suspected and carefully sought for. There is no just reason for giving up supravaginal amputation of the myomatous uterus in favor of total extirpation for fear of a later cancerous degeneration of the cervix, which is left behind. This is a decidedly rare occurrence, only sixteen cases of this

kind having been reported to date. The myoma seems liable to produce a predisposition for the development of a carcinoma, especially in the uterine body.

Sarcomatous degeneration, on the other hand, is not uncommon. Winter found sarcoma in 3.6 per cent of his patients suffering from a uterine myoma. Submucous myomas seem specially prone to undergo this malignant degeneration. It is interesting to note that out of his twenty-seven cases in only one was the diagnosis of sarcoma made previous to operation. The possibility of such a degeneration can not be considered a valid argument in pleading for immediate extirpation of every myoma. The diagnosis of sarcoma is difficult and usually can be made only by means of a microscopic examination. Total necrosis of a myoma he encountered just as often as sarcomatous degeneration. It is a serious and dangerous complication of myoma. These cases very often are met with immediately after a childbirth, and this fact is of importance in the diagnosis of this condition. Poorly nourished myomas are most likely to undergo cystic degeneration, while chronic congestion leads to an edema of a myoma. The indications for operation of cystic myomas, in Winter's opinion, are identical with those which should be regarded as indications for operation on myomas in general, namely symptoms which call for operation, and the one most often encountered is hemorrhage.

NEUROLOGY.

IN CHARGE OF

SIDNEY I. SCHAWB, M. D.

THE PATHOLOGY OF GENERAL PARALYSIS OF THE INSANE.—Robertson (*Review Neurology Psychiatry,* Feb., April, 1906. *The Morrison Lecture*).—An extended abstract of this paper is made necessary by the importance of the investigations here recorded and by the fact that the Morrison lectures do not fall into the hands of the general practitioner as a rule, for whom any phase of this subject should be of the greatest interest. The elucidation of the problem of the pathology of dementia paralytica has formed the chief object of research of the Scottish Asylums laboratory for a number of years. The increase in the number of persons dying with this disease as well as the increasing ratio of admissions to the asylums of individuals suffering with it testify to the importance of the subject. In general the pathology of dementia paralytica has passed through several periods. In the first period it was maintained that general paralysis was simply a manifestation of syphilis like any other late phenomenon of this disease. When it was found that antisyphilitic remedies had absolutely no effect on the course of the disease even in some cases acting the reverse, it began to be believed that the disease was not a direct result of syphilis but a secondary intoxication. This was the parasyphilitic, or metasyphilitic stage. The third period is the present in which there has arisen a feeling of scepticism in regard to the parasyphilitic toxines, the existence of which

has never been demonstrated and which are entirely hypothetical. A number of prominent neurologists all over the world have expressed their dissatisfaction with the theory of the parasyphilitic origin of dementia paralytica; Bianchi, for instance, has called it the product of premature deduction. The author of these papers arrived at his present standpoint in the following manner:

For some years he had studied the brains of paralytics in the same way that other investigators had done and was enabled to collect a mass of anatomical facts similar to theirs. These facts commonly found, the author tabulates. The idea then occurred to him that he was not studying the pathology of the disease dementia paralytica, but the effects of some toxic action, and that the toxines must have their origin somewhere outside of the brain. The author was further convinced that the syphilitic hypothesis did not account for the known facts regarding the disease. He therefore endeavored to find evidence of the occurrence of a general toxæmia and to localize the seat of the origin of the toxines. In a number of investigations carried out by Bruce, Ainslie, Macpherson and others, the theory was regarded as proven that dementia paralytica in many of its manifestations represented the resistance of an organism against bacterial invasion. Especially is this true for instance, in the febrile attacks. Further evidence of the existence of a general toxæmia was found in the occurrence of chronic endarteritis in the extracerebral vessels. In 1902 M'Rae, Jeffrey and the author began a series of bacteriological studies in cases of dementia paralytica with a view of ascertaining facts which would throw light upon the nature of the assumed bacterial toxæmia. A number of organisms were found, but among these there was one which on account of its frequency and the consistency of its location, demanded closer attention. It was found in the ailmentary tract, in the lungs and occasionally in the brain. This organism resembled the Klebs-Loffler bacillis. It was recovered in seventeen out of twenty cases. On the basis of this observation the hypothesis was advanced that general paralysis is the result of a chronic toxic infection from the respiratory and alimentary tracts permitted by general and local impairment of the defences against bacteria and dependent upon the excessive development of various bacterial forms, but especially upon the abundant growth of a Klebs-Loffler bacillus of modified virulence which gives the disease its special paralytic power. In the later investigation this hypothesis has been put to the test and every step forward has been attended with elucidation of some fresh fact that has rendered it more probable. A histological investigation of the supposed infective foci in a series of twenty cases in the catarrhal exudations in the respiratory and ailmentary tracts showed a bacillus identical in form and staining reactions with the organism isolated by cultural methods. A culture made from the organisms was injected into a goat for the purpose of obtaining an immune serum. After a time the animal developed a staggering gait and had an attack closely resembling that found in general paralysis. After its death a culture obtained from it showed the presence of the identical bacillus referred to above. The examination of the nervous system revealed changes which resembled those found in tabes dorsalis.

Further investigation showed that the bacillus was found very often in the genito-urinary tract. It is true also that this bacillus has been found in the genito-urinary tract of patients who had no trace of dementia paralytica, but never in such numbers. The next step was the experimental study of the action of the phagocytes and blood serum upon the diphtheroid bacillus isolated from cases of general paralysis. There was reason to suspect that certain indistinct granular, or rod-like bodies observed in the cerebro-spinal fluid in the walls of the cerebral blood vessels in the blood and in the urine were really diphtheroid bacilli that had suffered from the effects of a lysogenic or solvent action. In connection with this part of the study there is given a careful description of the organism in its morphological and staining reactions, and numerous other data are added to aid in identifying the organism. Inasmuch as the authors felt that this organism was the essential pathological agent in general paralysis they gave to it the name bacillus paralyticus. In referring to this organism as the specific agent in dementia paralytica the authors are careful to allow for the chance that there may be some doubtful points in their work, thus avoiding the dogmatic character so noticeable in studies of this kind. It has the general morphologic character of the Klebs-Loffler bacillus, its most striking characteristic perhaps, being its polymorphism, and in this respect it appears to excel at least the virulent form of the Klebs-Loffler bacillus. Agglutination tests were carried out as well as tests for the opsonic action. Pure cultures were obtained from the blood in four cases of the disease. It can be seen from this that no effort was spared to study the bacterial side of the question from all points of view. The article is illustrated by clear microphotographs of the organism in various conditions and in various structures.

In the last of these three lectures the author summarizes his work and among other significant points he mentions the following: The role of syphilis in the causation of dementia paralytica and tabes is only that of weakening the general and local defences, and that these diseases must be dependent upon an active bacterial toxæmia. The reasons for this view are carefully stated and Robertson is careful to mention that the theory which assumes that the secondary toxæmia is a result of the syphilitic infection is untenable. The other question whether the organism in question is merely an attenuated Klebs-Loffler bacillus, or one of specific agency, is left open and is not of any great importance in the question, but the author is inclined to believe that further study will show the organism is a special one. Some of the evidence for this view is given as follows: A bacillus of this nature is present in large numbers either in the alimentary or the respiratory tract, or both, and in the genito-urinary tract, in all cases of advancing general paralysis; this bacillus has a thread form which has been found invading the walls of the respiratory, alimentary tracts in five cases of general paralysis; it can be shown that this organism in its bacillary form invades the pulmonary tissues in cases of general paralysis and that it is commonly the only micro-organism present in large numbers in the catarrhal pneumonic foci that occur in most of such cases dying of congestive attacks. A growth of diphtheroid bacillus has now been obtained in cultures made

from the brain, post-mortem, in ten cases of general paralysis out of twenty-four in which cultures were obtained from this organ. Diphtheroid bacilli exhibiting metachromatic granules in Neisser preparations have been detected in the fresh blood of one case and in sections of the brain in two cases. It has been ascertained by experimental methods that these diphtheroid bacilli in contact with the living blood are rapidly taken up by the polymorphonuclear leucocytes and that they may be completely digested in the course of two or three hours.

Bodies exactly corresponding in appearance to these dissolving bacilli can be detected in the blood and in the cerebro-spinal fluid of the living general paralytic especially during the congestive attack. Pure growths of the bacillus were obtained from the fresh blood in four cases of general paralysis and from the cerebro-spinal fluid withdrawn by puncture in two cases. The centrifuge deposit from the urine of the general paralytic especially during a congestive seizure, commonly contains abundant diphtheroid bacilli that have been more or less affected by lysogenic action. Having advanced proof of the specific character of this organism a portion of which is quoted above, the author now advances the following as his explanation of the pathogenesis of this disease. The outline of this scheme is as follows: The specific bacillus. which can now be called bacillus paralyticus, can be conveyed from individual to individual by contagion. It is capable of living as a saprophyte at the surface of the various mucous membranes. There is ample warrant for the conclusion that to a person whose general and local defences against bacteria are intact the bacillus paralyticus is quite innocuous. It can neither multiply to any important extent upon a healthy mucosa, nor penetrate into the subjacent tissue. If, however, the mucosa is damaged, as it commonly is in dementia paralytica, the growth and the further extension of the bacilli are not impeded. Syphilis, alcohol and a too highly nitrogenous diet are factors which lead to an impaired general and local defense in this disease. The leucoblastic function of the bone marrow is likewise impaired by syphilis as is proven by the lodgement of the spirochæte in the epithelial cells including those of the bronchi. The pathogenesis of tabes from this point of view is also taken up and the paper concludes with the mention of the attempts which are being made to produce an antiserum and the difficulties that were encountered.

[Whatever individual opinions may be held in regard to the correctness of the views expressed in this series of researches, and however artificial may appear the reasoning that connects the experimental data with observed clinical facts, yet the work itself should be looked upon as of the greatest significance. Its further progress should be followed with care. It is not too much to say that Robertson's investigation, here outlined, is the most important piece of work on dementia paralytica that has appeared since the early clinical work which established the disease as a clinical entity. As this is the first serious attempt to bring together all the facts in this disease and to establish by means of experimental methods the connection between the end result of the pathological process and the active agents that produce them, it should be given the place in literature which belongs only to an investigation conceived in the broad way that this has been and carried out in the comprehensive manner which this abstract only faintly shows. Editor.]

OPHTHALMOLOGY.

IN CHARGE OF

JOHN GREEN, JR., M. D.

SOME INJURIES TO THE EYE FOLLOWING SUBCONJUNCTIVAL INJECTIONS OF SALT SOLUTION.—L. Alexander (*Arch. of Ophthalm.*, January, 1906). Subconjunctival injections of bichloride of mercury have fallen into disuse for a number of reasons. It was shown that eyes thus treated remained in an irritable condition after complete cure of the condition for which the treatment was instituted. The conjunctiva became thickened, dirty red, and of a jelly-like consistence, and in many cases was found so firmly adherent to the sclera that it could not be dissected off. Furthermore, experiments have shown the unlikelihood of the bichloride reaching the interior of the eye, to act there as a disinfecting agent. Bichloride is effective only in its capacity as a salt by exciting currents of diffusion in the lymph channels, and even this power is very slight since the larger part of the bichloride is changed into an insoluble albuminate of silver in the tissues.

These facts brought about the substitution of sodium chloride for the bichloride of mercury in subconjunctival injections. As a rule the salt injections have proved innocuous even in strong solutions (up to 33%) and have been of undoubted efficacy in a certain class of diseases.

Alexander cites three cases illustrating untoward bye-effects of salt injections. The first was that of a young woman who had been treated with numerous injections of a 2½ to 5 per cent. sodium chloride solution for interstitial keratitis. Some time later, firm adhesions between the conjunctiva and sclera were demonstrated by the use of dionin which disclosed numerous white linear scars indicating the points of adherence between conjunctiva and sclera. In a second case, one of recent choroiditis, the injection of a 10 per cent. saline solution was followed by severe pain in the eye with increasing irritation, photophobia and lachrymation. Four days later the bulbar conjunctiva began to show signs of beginning gangrene. The necrotic patch extended from the lower fornix to the lower part of the limbus. The cornea became superficially roughened. The anterior part of the lens presented two linear opacities. Shortly after, the cornea and lens cleared up, the necrotic conjunctiva separated, the defect healing by scar formation. In the third case both cornea and lens showed temporary opacities following subconjunctival injections of 5 per cent. sodium chloride. Alexander believes that the changes in the cornea and lens were due to exudations which were afterwards absorbed.

THE REMOVAL OF SMALL FOREIGN BODIES FROM THE CORNEA, CONJUNCTIVA, ETC.—F. Allport (*Iowa Med. Jour.*, April 15, 1906).—Foreign bodies that have lodged on the conjunctiva of the upper or lower lid are best removed by gently stroking with a cotton wound applicator. Occasionally an eyelash will lodge in the lower punctum from which it can be removed by forceps. (The reviewer once removed a hair from the lower punctum which had fallen into the eye while the patient was having his hair cut.)

In order to determine the existence of a foreign body in the cornea or sclera, the surface should be carefully inspected in a good light by the aid of a powerful convex lens. If necessary, light may be focussed upon the cornea by means of another convex lens. A solution of fluorescein (2 per cent.) dropped into the conjunctival sack will color all denuded areas green, thus serving clearly to outline the extent of the epithelial loss.

The removal of the foreign body must be conducted with strict regard to every rule of asepsis. The author cites the frequent dire results of removal of foreign bodies in factories by the so-called "shop oculist"—a workman who with a rough unclean tool scrapes away at and around the foreign body. Many a patient who does not lose his eye from infection as a result of these unclean methods, does suffer from subsequent extensive scarring of the cornea in consequence of the unnecessarily large amount of corneal epithelium scraped away by the bungler.

No attempt at removal should be made until the cornea is well under the influence of cocain. The skin in the vicinity of the eye should be surgically clean and the conjunctival sack well irrigated with boric acid or weak sublimate solution. A drop of Argyrol, 25 per cent, is used both before and after removal of the offending particle.

Allport states his preference for a slender Graefe cataract knife for the removal of foreign bodies, having proved in his hands the best instrument for getting behind the fragment which is thus easily shelled out. In case the foreign body is so deeply imbedded that attempts at removal might force it into the anterior chamber, it is well to resort to the various forms of eye magnets (if the body be of steel or iron), or even to introduce a Graefe knife into the anterior chamber, the blade supporting the body from behind while efforts are made to remove it from the front. The small eschar left after the removal of a hot particle should be lifted out bodily with the knife.

Glass fragments usually produce a clean incised wound. Such fragments are often difficult to see and must be sought for under oblique illumination at different angles.

The essential object to be attained in all corneal injuries and especially those located in or near the center of the cornea is to limit the destruction of the tissue to the smallest possible area in order that vision may be interfered with as little as possible.

Recent abrasions should be treated with a two per cent. solution of boracic acid or a ten per cent. solution of Argyrol supplemented by cold compresses, ocular rest and quiet. In the presence of a beginning infection the treatment should be more energetic: cauterization with carbolic acid or tincture of Iodine, followed by atropine solution, Argyrol and hot water fomentations.

Badly neglected cases which present themselves with deep ulceration, plastic iritis, and hypopyon should be placed in a hospital and the following treatment instituted: The ulcer should be curetted and cauterized, a two per cent. atropin solution should be used several times a day, a twenty-five per cent. solution of Argyrol used four times a day, very hot water fomentations several times a day and a Crede ointment poultice applied to the eye at night. The patient's general condition should be carefully looked after. Pilocarpine sweats and large doses of sodium salicylate are occasionally useful adjuvants.

A New Experience in the Diagnosis of Sarcoma of the Choroid in the Second Stage.—L. Buchanan (*Ophthalm. Review*, April, 1906).—An elderly woman had moderately advanced cataract in the right eye, beginning cataract in the left. Four months later the cataract in the right eye was found advanced but not yet ripe. Shortly after, the eye became painful and was found in a condition of subacute glaucoma with high tension. Excellent miosis was produced by eserin which, however, had no effect upon the tension. Finally a large peripheral iridectomy was performed, which availed no more in reducing the tension than had the eserin drops. The conclusion was inevitable that the true condition was an intraocular tumor and the globe was excised. On section, a small melanotic sarcoma was found growing from the neighborhood of the optic nerve entrance. The most important point in the case, however, was the fact that the retina was found to be very completely separated and tightly pressed forward against the lens and ciliary body.

The following explanation is offered to account for the non-reduction of the tension in this case: The anterior chamber was very shallow, owing to the lens being pressed forward by the retina, and the entire globe was probably, to a very slight extent, distended. When the anterior chamber was opened, the tension of the tunics of the eye was relaxed and they then contracted upon what was to all intents and purposes a separate cyst in the interior of the globe. This separate cyst was formed by the sclerotic behind and at the sides, but was bounded in front by the retina supported by the lens and ciliary body in such a manner that no rupture took place when the corneal wound was made. It is not improbable that, had a large incision been made in the cornea the retina would not have been sufficiently well supported and a rupture would have taken place.

LARYNGOLOGY AND OTOLOGY.

IN CHARGE OF

William E. Sauer, M. D.

A Syphilitic Gumma at the Bifurcation of the Trachea.—H. Von Schroetter (*Monatsschrift f. Ohrenheilkunde*, Vol. XL., Heft. 1.)—The author reports a syphilitic gumma at the bifurcation of the trachea in a man aged 49. He had become infected twelve years previously, but had been regularly treated. When first seen the man was markedly dyspneic. The dyspnea had been gradually getting worse. An examination of the chest revealed a slight bronchitis. The larynx was found normal. A direct tracheoscopic examination revealed an inflamed looking mass on the posterior wall of the trachea just at the bifurcation. The opening into the left bronchus was somewhat stenosed. About 3 cm. above the bifurcation there was a small ulcer. The patient was given the mixed treatment. The following day he was taken with a severe attack of dyspnea. He grew very cyanotic and was only saved by the prompt use of stimulants. The two days following the patient had similar attacks. A long tracheoscopic tube was then introduced and small portions of the infiltration were re-

moved with forceps. The bleeding was slight. A microscopic examination of the pieces removed showed them to be granulation tissue. The luetic treatment was continued and the patient began to improve rapidly. A tracheoscopic examination six months later revealed that the infiltration had entirely disappeared, but the opening into the left bronchus had somewhat contracted, though there was no interference with the passage of air. This case presents two points of interest: 1. The appearance of a luetic lesion 12 years after a regular treatment has been given. 2. The value of a direct tracheoscopic examination, as the diagnosis in this case would, no doubt, not have been made without it.

Catarrhal Deafness.—White (*British Medical Journal,* March 10, 1906).—The recovery of hearing after otectomy in many cases of suppurative otitis media, has led the author to try the operation in catarrhal deafness. The author has previously published his results on a number of cases operated upon. He now briefly reports two other cases in which there was considerable improvement following the operation, but they have been too recent to determine the permanency of the results. One case is mentioned that had been operated upon two years previously with most excellent results and there has been no loss of hearing since that time. There was some improvement in all the cases operated upon.

Aspiration of the Tympanic Cavity After Paracentesis. A Valuable Aid in the Treatment of Acute Otitis Media.—Friedenberg (*Medical Record,* Vol. LXIX., No. 9).—The author has been employing aspiration of the tympanic cavity after paracentesis in cases of acute otitis media for the past six years, with the result that the pain is relieved and free drainage is provided for. It also overcomes the tendency of the incision in the drum to close. The removal of the inflammatory exudate and the flowing out of blood serum into the tympanic cavity prevents septic clot formation. Also, in cases of children when there may be a doubt as to whether the drum has been properly incised, the application of suction will settle the question. Friedenberg's method of application is as follows: An olive shaped glass bulb about 5-8 of an inch wide with a very blunt tip is pressed against the external meatus, hermetically plugging the canal. Suction is then applied by means of an ordinary piston syringe.

The Aims and Limitations of Intra-nasal Surgery in the Treatment of Chronic Nonsuppurative Affections of the Middle Ear.—Harris. (*N. Y. Medical Journal,* April 14, '96.)—The relation of nasopharyngeal and nasal disorders to deafness has been a much discussed subject. After discussing the present status of the question the author concludes as follows:

1. The nose plays an important role as a causative factor in many cases of otitis media, but by no means in all such cases.

2. That the lesion in the nose is usually of an obstructive nature, acting as an obstacle to proper ventilation of the middle ear.

3. That in beginning cases of hypertrophic otitis media a certain amount of improvement in the hearing can be confidently expected by restoring proper ventilation of the cavity through measures addressed to the nose,

with the aim of relieving nasopharyngeal and tubal inflammation; but that (a) as yet only such cases of disease call for nasal treatment as show pathological changes in the throat, these demanding attention apart from the condition of the ear; (b) that it is important to determine the true nature of the process in the middle ear, as the sclerotic or so-called hyperplastic form is not influenced at all by such treatment; and (c) that adhesive changes and ankyloses cannot be expected to yield, however completely the nasal obstruction is removed. In a word, that while suitable cases are capable of being helped, many cases of chronic otitis media associated with certain nasal obstructions do not call for and will not be improved by any form of nasal treatment, and that all such treatment in these cases is unjustifiable and unwarranted.

4. That an important result to be secured by treatment is the relief afforded from the repeated attacks of acute rhinitis which by their effects on the Eustachian tube are wont to aggravate the chronic condition.

5. That tinnitus aurium vertigo are at times benefited by nasal treatment.

6. And finally, that because of the importance of treatment to the nose and throat a closer association clinically of otology and rhinology is urgently demanded.

DERMATOLOGY AND SYPHILIS.

IN CHARGE OF

MARTIN F. ENGMAN, M. D.

THE ETIOLOGY OF RELAPSES IN SYPHILIS.—J. Neumann, Vienna (*Medical Record,* April 28, 1906).—Although syphilis has been made the subject of many researches, and is one of the best known diseases, one of its most characteristic peculiarities, its relapses, has not been explained adequately from an etiological point of view, and the origin, localization and period of occurrence of syphilitic relapses should be made the object of frequent research. In spite of our more accurate knowledge of the causative agent of the disease, the explanation of the origin of the primary infection and of the relapses is still far from complete, and so long as we remain in ignorance of the relations of the incitants of disease to the biologic processes of the body, we shall be unable to solve these questions in a satisfactory manner. Regarding Virchow's hypothesis, quoted by Lesser, probably the first theory founded upon an anatomical and clinical basis, it must be admitted that it cannot be regarded as absolutely correct even for the earlier relapses, in which a contamination of the blood stream can be taken for granted, the condition Virchow evidently had in mind, since his theory assumed that the lymph glands formed the main repositories of the syphilitic virus from which intermittent infections of the organism took place. Relapses often occur in syphilis without demonstrable swelling of the lymph glands, and enlarged glands often persist for long periods of time without any relapse. But though the syphilitic glands are the foci of virus which may penetrate the juices of the body and evoke a new eruption in any region, repeated histologic researches have demonstrated that every portion of the body which has

been the seat of a well developed syphilitic product retains the residua of this and, during many years, like the lymph glands, may serve as a depot of virus which, under suitable conditions, may give rise to a relapse *in situ* or in a more remote region. That these deposits may diminish and finally completely disappear is in accordance with their biologic character. This is a sufficient explanation of the progressive diminution in frequency and intensity of the lesions, the unsymmetrical nature of manifestations, the diminished or totally lost virulence and the entire disappearance of relapses which is in proportion to the period of duration of the disease. The author emphasizes the fact that the syphilitic lymph glands, owing to their structure and function, are especially well adapted to be repositories of the syphilitic poison. It may be the case that the syphilitic virus may remain longer in the lymph glands until through some cause it passes into the lymph stream, so that it seems plausible to believe the lymph glands may have their part in the virus which gives rise to the late relapses, if they do not furnish it entirely. Those relapses which occur after a free interval of one or more decades are very remarkable and difficult to explain, but the existence of latent intervals of ten or more years has not been indubitably proven. Syphilitic symptoms may escape even the most careful observation, provided this is not continuous in the strictest sense of the word, yet the author does not deny absolutely the existence of long periods of latency. It may be regarded as an accepted fact that relapses occur also in portions of the body where no lesions occurred originally.

Those late relapses situated in regions where originally there was no syphilitic lesion are far from easy to explain in regard to their localization, singleness of occurrence and special conditions of formation. Lesser agrees with Unna in regarding late relapses of syphilis (tertiary lesions) as newly developing remains of old syphilitic products persisting from the years of the secondary or primary stage. This view the writer believes to be true only of relapses *in situ*. In the formation of the metastatic variety, probably the remains of the early syphilitic products also furnish the carriers of the syphilitic germ, but these must first effect an entry into the lymph or blood circulation and must possess a degree of virulence which renders them capable of producing a new lesion when present in sufficient numbers on suitable soil. If there were continuously present in the blood, syphilis germs in such quantities and of sufficient virulence to produce syphilitic lesions in any portion of the organism, then some syphilitic manifestation would have to be present in the body at all times. But most careful observations have shown that this is not true. The author does not affirm that in the latent periods, even after the first two years following infection, the blood stream is absolutely free from syphilis germs, but he assumes that during the period of latency any germs that may be circulating in the blood stream are not capable of evoking a lesion in the body itself, either through quantitative or qualitative weakness, or both of these together. He says "in the body *itself*" in view of the frequently observed fact that a pregnant woman with latent syphilis who does not exhibit any symptoms of the disease during her pregnancy, brings forth syphilitic offspring. This fact that from the blood stream of the mother with latent syphilis germs which have

passed into the fetus may produce severe lesions although they do not give rise to any manifestations in the body of the mother; the fact that individuals with latent syphilis who do not display any symptoms may transmit syphilis through an inconspicuous fissure by contact, causing a typical chancre to develop; that, therefore, germs which in the first organism were unable to produce a lesion evoke typical changes in the second, among other things lead to the conclusion that in the tissues themselves certain conditions must exist in order to cause a syphilitic lesion to be developed. This is spoken of as a "suitable soil," or "lessened resistance," but this is only an excuse for our defective knowledge.

The conditions governing the localization of metastases in a single organ or portion of an organ are still unknown, which is also the case in other infectious diseases. The author observes that if we keep in mind the route which the syphilis germs must travel in their passage from the organism of the mother into that of the fetus, we shall come to the conclusion that there is justification for the view that syphilis germs which have entered the blood stream from some residual focus are capable of traveling long distances in the body. In this way the first condition of the production of metastatic relapses of syphilis is shown to be a possible and real occurrence, and these facts indicate that the small amount of syphilis germs that pass into the blood from the residual foci is probably the chief cause of the scanty and isolated appearance of metastatic, late relapses; but not the only cause, for in the case of an infection produced by a small fissure on the lip of an individual with latent syphilis, the number of syphilis germs transmitted, though able to produce a chancre at the place of contact, is very small, while the much larger number of germs present at the same time in the infecting organism does not give rise to any manifestations. Hence there must exist in the tissues themselves certain conditions, and this is the second factor in the explanation of the asymmetry and singleness of late syphilitic relapses. When one conisders the well known fact that in individuals with latent syphilis a syphilitic lesion is to be produced by inoculation even with highly virulent syphilitic secretion only after the application of considerable irritation (that is, the production of suitable conditions in the tissues), it will be apparent that in an organism which has for a long time been the seat of latent syphilis, the situations in which the conditions necessary for the development of a syphilitic product exist are few and far between. The author concludes that (1) the late syphilitic relapses, the relapse *in situ* as well as the metastatic relapse, have their origin in the microscopically demonstrable syphilitic products, including the syphilitic lymph glands, which persist after the disappearance of the clinical manifestations. These may exist a very long time, even more than a decade. (2) The complete elimination from the organism of all the germs of the disease as promptly as possible, therefore, follows as a fundamental indication in the treatment of syphilis.

The reviewer has considered this paper so much at length because he considers it one of the most important articles on the subject that has appeared in recent years.

BOOK REVIEWS.

A Text Book of Legal Medicine. By F. W. Draper, A. M., M. D. (Harv.), Professor of Legal Medicine in Harvard University; Medical Examiner for the County of Suffolk, Mass., etc. W. B. Saunders & Co., Philadelphia and London. 1905.

This text book, the outgrowth of an unusually large experience as medical examiner for Boston, must be regarded as the most valuable of the recent books on this subject.

The position that Draper occupied for so many years gave him opportunity to collect a mass of data on the subject of legal medicine of which important use has been made in the writing of this book. It is impossible to point out the many chapters deserving praise. It is sufficient to note that they reflect the spirit of long experience, accurate observation and an intense desire for the truth. The chapters on medical witness and expert medical testimony should be carefully read by every one who may come in contact with the courts of law either as a witness or as an expert. From the very nature of his calling, every physician will, some time or another, become a witness as to fact. The insistence on absolute fairness on the part of the medical expert witness should be carefully considered by the readers of Draper's book. The lamentable state of expert medical testimony in America rests chiefly upon the lack of the necessary knowledge on the part of the medical expert that he is required by the law to be just this. Until a better book than this appears, which will not be for a long time, Draper's book should be a part of the library of physicians and students in qualifying them for the position which their profession entails upon them in its relation to the law of the community in which they live.

Guide Pratique du Medecin dans les Accidents du Travails. Leurs suites medicales et judiciaries, par Em. Forgue, professeur de clinique chirurgicale a la Faculte de Montpellier, correspondent de l'Academie de medecine, et E. Jeanbrau, professeur agrege a la Faculte de Montpellier, laureat de la Societe de chirurgie. Avec une preface de M. Jean Cruppi, avocat a la Cour de Paris, depute de la Haute-Garonne. 1 volume in-8° de 370 pages (Masson et Cie, editeurs). Paris.

This book is the outcome of the law passed in France in 1898 by which injuries received accidentally or as a result of certain work were to be adjudicated in the light of the best information to be obtained. By this law, the judge, before whom the case was tried, would be required to be informed concerning the question in its various phases. To do this intelligently required information of many different sides of such injuries. To furnish this, the authors of this book place before their readers an exposition of the subject adapted to this end. The more common injuries due to different kinds of work and machinery are given with methods to obtain the desired data. A chapter on simulation and on medical and one on expert testimony are valuable additions to the work. Although this book has been written from the point of view of the French courts and the French law, yet it contains much that might interest an American reader. Especially is it valuable for him to know how much better is the system in France than the one in vogue in this country. The contrast between the two is so noticeable that the American reader might, as a result of his knowledge, become one of those who will make the effort to change the condition here.

Atlas and Epitome of the Diseases of the Skin. By Dr. Franz Mracek. W. B. Saunders & Co., Philadelphia and London, 1905.

The second edition of this little hand atlas has been revised and enlarged; translated and edited by Dr. Henry W. Stelwagon, of Philadelphia. It con-

tains seventy-seven colored plates and fifty half-tone illustrations. This volume is so well known and so popular that it is hardly necessary to dwell upon its merits. One who has had experience with skin diseases knows how futile are pen pictures of their various phases. A photograph or plate, well produced, shows more at a glance than the best pen picture could accomplish. The moderate price of this atlas and the excellence of its plates have given it wide distribution.

NATALITY AND FECUNDITY. A Contribution to National Demography. By C. J. Lewis, D. Sc., M. D., Edin., and J. Norman Lewis. New York: William Wood & Co. 1906.

The birth registers of Scotland for the year 1855 are unique for their comprehensive detail; indeed, so laborious was the work of entry that in the succeeding year the schedule was considerably restricted. More fully than has yet been attempted, these statistics have been utilized in the volume before us. It is impossible to even outline here the interesting results which were obtained in the investigation of such problems as comparative fertility and fecundity, initial fecundity, chronology of births, masculinity, sterility, etc. Physicians interested in these questions will find in this volume an enormous amount of valuable information.

INTERNATIONAL CLINICS. Vol. IV. Fifteenth Series. 1906. Philadelphia and London: J. B. Lippincott Co.

This volume of the International Clinics is, if possible, richer in material than many of the preceding volumes. It contains, among many others, an article on the effects of Rœntgen Rays upon the blood-forming organs, by Professor Warthin of Ann Arbor, the Symptomatology and Diagnosis of Malta Fever, by Charles F. Craig, the Later Stages of Cirrhosis of the Liver, by Sir Dyce Duckworth, Nervous Disorders in which Psychotherapy May Prove of Value, by Gilbert Ballet, the Therapeutic Value and Mode of Action of Physiologic Saline Solution, by Dr. Hallion and Dr. Carrion.

READY REFERENCE HAND BOOK OF DISEASES OF THE SKIN. By George Thomas Jackson. Lea Bros. & Co., New York and Philadelphia, 1905.

That this book has reached its fourth edition testifies to its popularity and excellence. The author has brought the book thoroughly up to date, and added some extra chapters. Although the articles on the various diseases are short, yet they are sufficient to give the reader a clear insight into the subject. The great number of excellent prescriptions contained in the appendix also adds to the value of the little volume.

DISEASES OF THE NERVOUS SYSTEM RESULTING FROM ACCIDENT AND INJURY. Pearce Bailey, A. M., M. D. D. Appleton & Co., New York.

This is a second edition of Bailey's earlier work treating of the same subject. In this edition the author has extended the scope of his book until it includes data on all traumatic affections of the nervous system. The present volume is written from the neurologist's standpoint, which adds much to the value of the work, as treatises from the point of view of a surgeon are common enough. This book may be said to fulfill its purpose very well, and from it one can readily appreciate that the personal experience of the author, which has been considerable, has been used to the utmost advantage. The chapter on injuries to the spinal cord is especially to be mentioned, chiefly for the sane position the author takes on the question of diagnosis and prognosis. The part devoted to the surgical aspect of this condition ought to be read carefully by every surgeon who has occasion to operate on the spinal cord for injury. The question that confronts every neurologist, both in practice and in questions which come up in the courts, is the influence which trauma exerts in the causation

of certain degenerative diseases of the nervous system. The author accentuates the difficulties in the way of an absolute proof that head trauma is a direct cause of paresis, though, in the course of suits for damages, it is frequently asserted that it is. The chapter on malingering is likewise worthy of praise, and the account of several well-known cases of this sort adds much to its value. As might be expected, the chapters on neurasthenia and hysteria are well presented and full of the practical points which are necessary for use in actual cases. This book can be heartily praised both for what it contains and for the calm and scholarly manner in which it is presented.

A Text-Book of Human Physiology, Including a Section on Physiologic Apparatus. By Albert P. Brubaker, A. M., M. D. Second Edition. Philadelphia: P. Blakiston's Son & Co. 1905.

The fundamental problem that confronts the writer of a text-book of physiology is the question what to leave out and what to include. The field of physiology is now so vast that it is quite impossible to include in one volume everything of importance. Moreover, physiologic research is making such giant strides that a book has hardly appeared before, in many respects, it is behind the times. Thus, in this volume, the chapter on proteids, adequate when it was written, fails to include the recent fundamental work of Emil Fischer. On the whole, the amount of material that the writer has been able to compress within the compass of some 700 pages is extraordinary, and as a book of reference the volume will be found useful. On the other hand, this very condensation has interfered with the readability of the text, so that it will hardly hold the attention of the student as well as the less inclusive and more discursive book of Howell. A book as inclusive and at the same time as fascinating as the German Physiology of Tigerstedt still remains to be written in the English language.

Die Geschlecter der Thiere. By Dr. P. J. Moebius. Carl Marhold, Halle, 1906.

In this little brochure Dr. Moebius continues his study into the sexual problem which for some years has been interesting him. The series began with a study of the physiological weakmindedness of women. This little monograph attracted a great deal of attention in Europe, and seven or eight editions were required to satisfy the demand. The whole series come under the general title of contributions to the question of sexual differences. The comparative side of the question must be considered as a new departure, and in this volume the question of animal sexuality is treated in the same fashion. Whatever one may believe of the place such a work may have in the scientific literature of the sexual question, one cannot help being interested in the manner in which the author handles his subject. Moebius possesses an entertaining style and writes with conviction that cannot be denied. Nevertheless one must admit that Moebius, in these monographs, seems to be attempting to force into whatever part of his subject he is considering, the main thesis, and that is, the inferiority of women in the scheme of creation and the wrong place she has come to fill through the development of traits which are not by nature hers. If this position is clearly recognized, then the perusal of these various brochures possesses a certain amount of interest, though Moebius may fail to convince his reader as readily as he himself is convinced of the correctness of his point of view.

Ursachen und Folgen der Rechtshaendigkeit. Von Dr. Ernst Weber. Carl Marhold, Halle, 1905.

This is one of those semi-popular monographs which have obtained so much vogue in Germany. The value of such books depends upon the care with which the material is handled, so that the lay reader is not lead astray by data that are not accurate and that are not correctly interpreted. With much practice the Germans have acquired a talent for this sort of writing that is remarkable,

considering the difficulty of presenting a scientific subject to an unscientific public. This book is an admirable example of this class of work. The author begins by considering the question of right handedness from the comparative point of view and the presence of it in infants. There is, of course, a historical chapter on righthandedness with an additional chapter of the same in the present time. Various theories are considered to explain the state of things as we see it now, and the consequences are next considered. The interesting question of the influence of righthandedness in the development of the speech center on the left side of the brain is carefully gone into and the author believes that this cannot be the sole cause of this condition. Enough has been pointed out to indicate the scope of this work, and the suggestion is added that the reading of the little book will repay the effort if only to introduce one into the class of popular scientific literature which has at present such a vogue in Germany, so that a taste for this sort of thing may follow in this country, where the need of it is felt very strongly.

THE INTERNATIONAL MEDICAL ANNUAL. A Year Book of Treatment and Practitioner's Index. Twenty-fourth year. New York: E. B. Treat & Co., 1906.

The appearance this year of the Medical Annual was somewhat delayed by a distressing accident, namely, the total destruction by fire of the offices at a moment when a large part of the volume was in type. This necessitated the rewriting of a considerable portion of the contributions.

The volume presents a review of the therapeutic progress of the year. In the first part the work done on the various drugs is discussed; in the second part, therapeutic advances, both surgical and medical, are taken up under the captions of the various diseases concerned, arranged alphabetically; the third portion is devoted to a discussion of some of the year's happenings in sanitary science. An elaborate index adds greatly to the value of the volume.

MENSTRUATION AND SKIN DISEASES. By L. Duncan Bulkley, A. M., M. D., Physician to the New York Skin and Cancer Hospital. New York: Rebman Co. 1906. Price, $1.00.

For the last twelve years the author, an eminent dermatologist, has collected data concerning the influence of the menstrual function on certain diseases of the skin. The results of these studies are embodied in this interesting little volume of 108 Demy 8vo. pages. The numerous case records, together with the carefully collected literature on the subject, form a most valuable contribution to the still obscure relation existing between sexual function and the etiology and course of certain dermatoses. The volume will prove of equal interest to the dermatologist, gynecologist and general practitioner.

A SYSTEM OF MEDICINE by many writers. Edited by Thomas Clifford Albutt, Regius Professor of Physic in the University of Cambridge, etc. New and Cheaper Edition. Volume I. New York: The Macmillan Co. 1905.

The rapid progress made in the medical sciences has necessitated the preparation of a new edition of this largest and possibly best of all systems of medicine. Albutt's work is too well-known to call for an outline of its scope and excellency at this place. The new edition is brought up-to-date by the addition of much valuable material, thus, e. g., to etiology alone the whole chapter of bacteriology had to be added. In order to avoid an enormous expansion of this work, historical matter for the most part has been omitted and all "overlapping" parts as far as possible excised. Footnotes, as a rule, have been excluded, and references in the text replaced by select bibliographies.

The first volume of almost a thousand pages consists of two divisions. The first, entitled "Prolegomena," comprises a large number of interesting articles on such subjects as medical statistics, temperament, laws of inheritance, pathology of nutrition, principles of drug therapeutics, nursing, hygiene of youth, life assurance, etc., etc. Division II is devoted to the "Fevers," and consists of two

parts. Part I is an essay of Sir Joseph Fayrer on Isolation and Sunstroke. In Part II, entitled "Infections," all the infectious diseases are considered.

CLINICAL OBSTETRICS. By Robert Jardine, M. D., Edin. M. R. C. S. Eng. F. F. P. & S. Glas. F. R. S., Edin. Professor of Midwifery in St. Mungo College in Glasgow, etc. With 99 illustrations and a colored plate. Second Edition. New York: Rebman Co. 1905. Price, $4.75.

The intention of the author to present a treatise exclusively devoted to the clinical side of obstetrics is quite evident. After a short introductory chapter on asepsis in midwifery, the writer at once goes *medias in res* by devoting Chapter Two to a consideration of the symptoms of pregnancy. The volume abounds in valuable practical suggestions, but gives no space to anatomic, physiologic or embryologic subjects. Numerous case reports are given as illustrations. Whether this feature enhances the value of this otherwise excellent volume seems more than doubtful. Chapter XXIX., e. g., deals with eclampsia and comprises 42 pages, 32 of which are taken up with a recitation of the histories of 30 cases of eclampsia.

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